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Understanding Staff Responses to Challenging
Behaviour in Adults with a Learning Disability: The
Role of Knowledge, Attributions and Emotion
Regulation Style

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Doctorate in Clinical Psychology

The University of Edinburgh

2011



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Abstract

Introduction: Knowledge and attributions are frequently cited as variables which may help to understand staff responses to challenging behaviour in people with a learning disability. Previous research has found only partial support for Weiner's (1980, 1986) model of helping behaviour within a learning disability context. The study developed a clinical definition of 'helping behaviour', and examined knowledge of challenging behaviour and the combination of attributions from Weiner's (1980, 1986) model in predicting staff helping behaviour. In addition the emotion regulation strategies of cognitive reappraisal and expressive suppression were investigated in moderating the relationship between attributions and helping behaviour, developing an overarching framework between attributions, staff stress and positive staff approaches to challenging behaviour.

Method: One hundred and seven support staff completed self-report measures of knowledge of the term and management of challenging behaviour, causal attributions, emotion regulation style and behavioural response to challenging behaviour.

Results: Knowledge and helpful attributions were significantly correlated with helping behaviour, however, when regressed onto helping behaviour, only knowledge significantly contributed to the variance. No significant correlations were found between emotion regulation styles and attributions. No moderating or mediating effect was found for emotion regulation styles on the relationship between attributions and helping behaviour.

Discussion: The results suggest that knowledge is the only significant predictor of positive staff approaches in managing challenging behaviour. There was limited support for the application of Weiner's (1980, 1986) model of helping behaviour. Individual differences in emotion regulation style did not provide an overarching framework between attributions, staff stress and positive staff approaches. Clinical implications, study limitations and directions for future research are presented.

Chapter 1 – Introduction

1.1 General Introduction

It is estimated that approximately 10-15% of people with a learning disability display behaviours which challenge health and social care services (Emerson *et al.*, 2001). The cost of these challenging behaviours are well documented, and go beyond the immediate physical impact of the behaviours on the person themselves and on those around them (Emerson, 2001). The current evidence base illustrates that the presence of challenging behaviour in someone with a learning disability increases the likelihood that the person will be at risk of abuse, inappropriate treatment, exclusion, deprivation and systematic neglect (Emerson, *et al.*, 1994). In addition, staff who work with people with learning disabilities and challenging behaviour are more likely to report negative emotional reactions and in the long-term, are more likely to report stress and reduced psychological wellbeing (Hastings, 2002).

The current evidence base for effective management of challenging behaviour is based on the principles of positive behavioural support (LaVigna & Willis, 1995). Within a values based framework, this approach highlights the importance of assessing the person, their behaviour and the environmental/social context in which the behaviour has been defined as challenging (Ball *et al.*, 2004; Royal College of Psychiatry, British Psychological Society & Royal College of Speech & Language Therapists; RCP, BPS, RCSLT, 2007). The successful implementation of any multi-element support plan relies heavily on the responses of direct care staff to implement it. Research findings have highlighted the important role of staff behavioural responses in the development and maintenance of challenging behaviour (Hastings & Remington, 1994). There is a considerable body of research which has examined the

variables which may help to understand the behavioural responses of staff to challenging behaviour. The main findings from this research are as follows:

- *Lack of knowledge:* A lack of knowledge has been found to impact on different aspects of staff practice. These include staff anxiety, job turnover, burn-out rates and the inappropriate management of challenging behaviour (e.g. Allen *et al.*, 1990; Bromley & Emerson, 1995).
- *Organisational factors:* Informal working culture developed within staff teams has been found to be more influential on management approaches to challenging behaviour than formal organisational policies (Hastings & Remington, 1994b).
- *Staff causal attributions:* More specifically, the application of Weiner's (1980, 1986) model of helping behaviour proposes that through the mediating role of positive emotion; external, uncontrollable, and unstable causal attributions about a person's behaviour are more likely to lead to helping behaviour. On the other hand, through the mediating role of negative emotions; a person is less likely to offer help if they make causal attributions about a person's behaviour that are internal, controllable, and stable.
- *Staff stress:* Emotional responses play an important role as a mediating process within Weiner's (1980, 1986) model. More recently, the central role of negative emotional responses has been proposed (Hastings, 2002, 2005). Hastings (2002) has argued that staff who experience negative emotions on a long-term basis are more likely to report stress and reduced psychological wellbeing (Hastings, 2002). Stress levels have been found to impact on the quality of staff interactions with clients (Rose *et al.*, 1998)

Bringing the current evidence base together, knowledge, and attributions, will be examined as predictive variables of staff reported behavioural responses to challenging behaviour. There is a growing interest in integrating the attributional, emotional, and stress approaches to better understand staff responses to challenging behaviour (Rose, *et al.*, 1998, Hastings, 2005). The current study will aim to integrate these models, by examining individual differences in two emotion regulation strategies (cognitive reappraisal and expressive suppression) and whether these moderate (strengthen or weaken) or mediates (accounts for the relationship) the relationship between attributions and staff behavioural responses to challenging behaviour. Firstly, the literature search strategy used in the study will be outlined, followed by the definition of learning disability and challenging behaviour.

1.1.1 Literature Search Strategy

A literature search was conducted using the following databases: OVID, PsychINFO, EMBASE, MEDLINE, CINAHL, Web of Knowledge and the Cochrane Library. The following keywords were entered: intellectual disability/disabilities OR learning disability/disabilities OR mental retardation OR mental handicap OR mental deficiency. These were then separately combined with challenging behaviour OR problem behaviour OR aggressive behaviour OR self-injurious behaviour OR destructive behaviour. All of these were then separately combined with staff knowledge, AND staff emotional reactions AND staff behavioural responses AND staff stress. In addition, references from key papers were examined to find further relevant studies. Appendix I contains a summary and critique of the main studies reviewed for this thesis.

1.2 Definitions

1.2.1 Learning Disability

It is accepted that people with a learning disability do not represent a homogenous group. However, regardless of variations in the precise terminology or working definitions there are three core criteria that must be met before someone is considered to have a learning disability:

- Significant impairment of intellectual functioning;
- Significant impairment of adaptive/social functioning;
- Age of onset before adulthood.

(British Psychological Society, 2001)

This definition has gained acceptance across professional groups within the UK and America. It is also consistent with the definitions provided in the Diagnostic and Statistical Manual of Mental Disorders (4th Edition; DSM: APA, 1994) and International Classification of Disorders (Tenth Edition; ICD-10: World Health Organisation, 1992).

1.2.2 Challenging Behaviour

The term challenging behaviour became prominent in the UK following the Kings Fund Centre Project Paper *Facing the Challenge: An Ordinary Life for People with Learning Difficulties and Challenging Behaviour* (Blunden & Allen, 1987). It emphasised that behaviours are best defined in relation to their challenge to services rather than problems solely intrinsic to the individuals with learning disabilities. The most widely used definition of the term challenging behaviour is:

‘culturally abnormal behaviour(s) of such an intensity, frequency or duration that the physical safety of the person or others is likely to be placed in serious jeopardy, or behaviour which is likely to seriously

limit the use of, or result in the person being denied access to, ordinary community facilities' (Emerson, 1995, p.4-5).

The Royal College of Psychiatry, British Psychological Society & Royal College of Speech & Language Therapy (2007) emphasised the social construction of challenging behaviours as a product of an interaction between the individual and their environment. This best practice document provides an updated definition of challenging behaviour:

'Behaviour can be described as challenging when it is of such an intensity, frequency or duration as to threaten the quality of life and/or the physical safety of the individual or others and is likely to lead to responses that are restrictive, aversive or result in exclusion' (RCP, BPS, & RCSLT, 2007, p.10)

In order to manage the variation of behaviours included in the definition, many studies have classified challenging behaviours into broad categories; aggressive, destructive, self-injurious and stereotypy (e.g. Harris, 1993; Lowe et al., 2007; Oliver *et al.*, 1994). Studies which have explored staff's definitions of challenging behaviour (Hastings, 1995; Lowe & Felce, 1995; Lowe, *et al.*, 1995) suggest that such behaviours, as defined by staff, are those which constitute a management problem to the staff themselves (Hastings, 1997). Hastings (1997) concluded that such a view might exclude a number of behaviours (in particular stereotypy and self injury) that would be considered challenging according with the above definitions, as these behaviours threaten the quality of life and/or physical safety of the individuals themselves. Therefore, in addition to the behaviour itself, labelling behaviour as challenging is influenced by a number of factors. These include the context of the behaviour, and the values of those judging the behaviour as challenging (Baker, *et al.*, 1998).

1.3 Prevalence of Challenging Behaviour

The difficulty in developing an operational definition of challenging behaviour has understandably impacted on variation in prevalence figures (Cullen, 1999). Several studies have either limited the prevalence to specific forms of challenging behaviour (e.g. Harris, 1993; Oliver *et al.*, 1987) or having included different forms of challenging behaviour, have restricted the prevalence to subpopulations (e.g. Lowe *et al.*, 2007; Rojhan, 1986). Wider scale studies across settings and forms of challenging behaviour have reported prevalence rates of between 10 and 15% (Emerson, *et al.*, 2001). For more severe challenging behaviour studies have reported prevalence rates of between 5 and 10% (Borthwick-Duffy, 1994; Emerson *et al.*, 2001). Prevalence of challenging behaviour is reported to be correlated with severity of impairment (Kiernan & Qureshi, 1993) and institutional living compared to family homes, group homes, foster homes and semi-independent residences (Bruinks *et al.*, 1994).

The larger scale prevalence studies that have looked at a wide range of challenging behaviours have reported that such behaviours often co-occur (e.g. Kiernan & Qureshi, 1995, Qureshi, 1994). Qureshi (1994) found that 43% of those rated as displaying challenging behaviours were also rated as presenting with a serious management problem in two or more areas of aggression, destruction, self-injury and 'other'. This raises the question of whether challenging behaviours can validly be examined in terms of a single topography, and it has been argued by Kiernan and Qureshi (1993) that these data indicate that challenging behaviour may need to be considered as parts of an overall pattern of behaviour rather than as single phenomena.

1.4 The service context

Normalisation theory and Social Role Valorisation (SRV: Wolfensberger, 1972, 1983) advocates that people who are at risk of being perceived as less valuable members of society such as people with a learning disability, should be supported in accomplishing socially valued roles, for example as a family member, neighbour, employer. The fulfilment of these roles may then provide these individuals with home and family, friendship, dignity, respect, acceptance, a sense of belonging, an education, a voice in the community, participation, a decent material standard of living, opportunities for work and self-support, and a normative place to live. The values and principles underpinning SRV, in addition to concerns regarding the predicted costs associated with institutional care, were viewed as the driving forces behind community-based care (Emerson & Hatton, 1994). It was the intention to provide services which transformed values from custodial care to that of quality of life, social care, empowerment and support (Emerson & Hatton, 1994). Following the release of the King's Fund paper 'An Ordinary Life' (Blunden & Allen, 1987), more radical changes were proposed. A range of services now exist; including secure units, small group homes, and individual homes with supported living (Emerson & Hatton, 1994). However, the reality of community life for people who display challenging behaviour, is reported to be far from 'ordinary'. As Cullen noted:

'Staff are unqualified and poorly trained and consequently service users acquire few new skills. In these worst cases life is no better – or even worse – than it was in the old institutions' (Cullen, 1999: p.20).

It is reported that people with challenging behaviour are more likely to experience placement breakdown and be readmitted into a hospital setting. Once admitted, they are less likely to be discharged (Cullen, 1999). Indeed, more recently, the RCP, BPS, & RCSLT (2007) has recommended as best

practice that services are designed as ‘capable environments’ - environments which enable people who present with behavioural challenges to remain in their own homes and communities.

1.5 Impact of Challenging Behaviour

1.5.1 On the client

The impact of challenging behaviour on the person with a learning disability can be viewed from different levels. On a physical level, self-injurious behaviour can lead to secondary infections, permanent scarring/malformation, loss of sight or hearing, additional neurological impairments and in some cases even death (Mikkelsen, 1986 as cited in Emerson *et al.*, 1994). From a systemic perspective, Emerson *et al.* (1994) reported that the physical and emotional wellbeing of people with learning disabilities are put at risk by the unhelpful responses of staff and services to challenging behaviour. It is documented that the unhelpful responses include the following:

- Unnecessary or excess medication

The use of psychotropic medications in people with learning disabilities and challenging behaviour has been a point of controversy for many years (Cullen, 1999). The concerns raised in the literature include the relatively high rates of prescribing of anti-psychotic medications (McGillivray & McCabe, 2005), the common incidence of polypharmacy, the detrimental side-effects from some drugs that are not closely monitored, lack of an evidence base for cost effectiveness and evidence of any reduction of challenging behaviour in those who do not have a diagnosed mental health problem (Brylewski & Duggan, 2004; Cullen, 1999, Romeo *et al.* 2009). Keirnan, *et al.* (1995) found that outwardly directed behaviour was most commonly medicated compared to extreme forms of withdrawal.

- Physical or mechanical restraints

Physical and mechanical restraints are commonly used to manage challenging behaviour, however the rates of use vary widely, between and within services (Sturmey, 2009). The long-term use of mechanical restraints include muscular atrophy, demineralization of bones, shortening of tendons, arrested motor development and disuse of limbs (Allen, 2003).

- Deprivation, neglect and abuse (physical and emotional)

It is well documented that people with learning disabilities who display challenging behaviour are at serious risk of substantial social deprivation through being excluded from everyday activities and settings, having their needs neglected, and being subjected to abusive practices (Emerson *et al.*, 1994).

1.5.2 On the staff

- Emotional Responses

Several studies have reported that care staff who work with people with learning disabilities and challenging behaviour experience a range of negative emotions (e.g. Bromley & Emerson, 1995; Hastings, 1995; Racza, 2005). Hastings (1995) found that for self-injurious behaviours, staff reported emotions of sadness (58% of staff) and anger/annoyance (26%) and for aggressive behaviours, staff reported fear/anxiety (32%). For stereotyped behaviours staff reported feeling annoyed/irritated (16%). Bromley & Emerson (1995) found a similar pattern, and in addition, found that anger, annoyance and disgust, and despair, sadness and fear formed two inter-correlated clusters of negative emotions.

- Stress/psychological well-being.

Perceived stress, job satisfaction and psychological well-being have also been included in staff outcome measures. Studies have reported that staff working with challenging behaviour experience moderate levels of stress (Rose, 1995) and the effects of stress have been measured in a number of different ways, including low job satisfaction (Hatton *et al.*, 1999), burnout (Lawson & O'Brien, 1994), and clinical levels of anxiety and depression (Jenkins *et al.*, 1997). There is a growing body of literature which has reported associations between challenging behaviour and staff emotional reactions, an association between emotional reactions and staff stress, and associations between staff stress and staff interaction behaviours (Rose & Rose, 2005). This will be discussed further in section 1.10.1.

Summary of section:

- The literature suggests that the presence of challenging behaviour increases the likelihood that the person with a learning disability will be at a higher risk of being administered unnecessary or excess medication, will be physically and mechanically restrained, and experience deprivation, seclusion and neglect.
- The impact of challenging behaviours on staff has also been well documented. Staff have frequently reported a range of negative emotions, stress, and reduced psychological well-being.

This next section will outline the different models of challenging behaviour followed by a review of the current evidence base on the management of challenging behaviour.

1.6 Models of Challenging Behaviour

1.6.1 Biological Model

It is reported that 70% of people with a severe learning disability have a chromosomal or genetic defect (i.e. Down syndrome, fragile X syndrome) while biological factors involved in the perinatal and postnatal stages of development can be identified in a further 15% (Carr, 2002; Hagerman & Hagerman, 2002). However, Murphy (1994) argued that this does not mean that other difficulties associated with a severe learning disability are necessarily biological in nature. A failure to establish a specific relationship to degree of learning disability and behaviour shown, led several studies to examine the behaviours of children with specific syndromes. It has been reported that there are only two known conditions which can be biologically defined and which lead to specific behaviours: Lesch-Nyhan syndrome and Prader-Willi syndrome. The former is associated with self-injurious behaviours such as hand- and lip-biting (Murphy, 1994) and the latter is associated with an involuntary focus on food and compulsive rituals (Holland *et al.*, 2002). The existence of a psychiatric illness may manifest itself as challenging behaviour, however there is debate regarding the ability of clinicians to be able to diagnose a psychiatric illness in someone who has limited language abilities (Kiernan *et al.*, 1995).

1.6.2 Operant Model

Operant learning theory (Skinner, 1969) supports the view that challenging behaviours can be learnt in one of two ways: by positive or negative reinforcement. This can be explained using the following A (Antecedent) B (Behaviour) C (Consequence) model and examples.

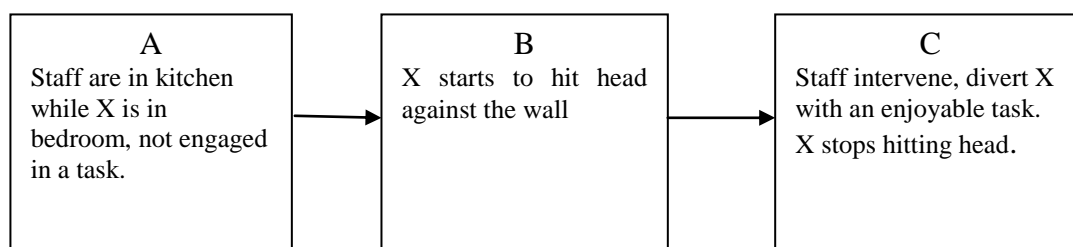


Figure 1: Illustration of Positive Reinforcement of Challenging Behaviour

Figure 1 provides an illustration of the process of positive reinforcement whereby, providing a rewarding consequence following the behaviour increases the likelihood of the behaviour re-occurring.

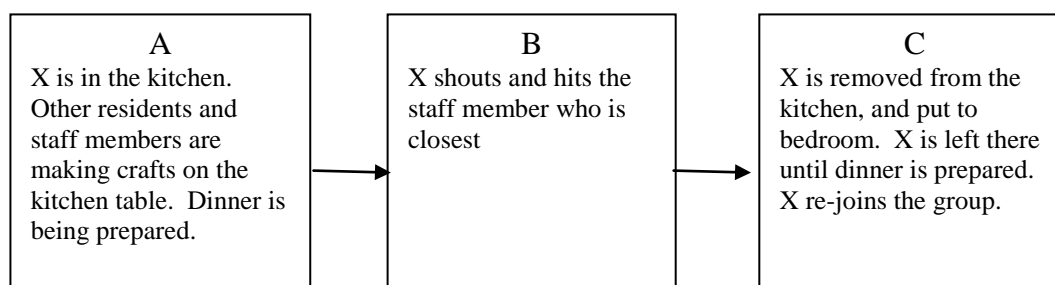


Figure 2: Illustration of Negative Reinforcement of Challenging Behaviour

Figure 2 provides an illustration of how challenging behaviour can be negatively reinforced. An aversive stimuli (task demand/environmental noise) is removed, increasing the likelihood of the behaviour re-occurring.

In both examples, the behaviour has been followed by a desirable outcome for the individual. This model forms the basis for understanding what function the behaviour serves for the individual. The behaviour may have several different functions for the same individual or different behaviours may have the same functions for different individuals (Baker *et al.*, 1998). The desired outcomes may include escaping or avoiding unpleasant activities; it may feel good or generate

interesting sensory sensations; it may allow the individual to obtain objects or events; or it may gain attention and social contact with others (Baker *et al.*, 1998).

The operant model can also be applied to and help to understand the development and maintenance of staff behavioural responses to challenging behaviour. Given the emotional experiences reported by staff who work with challenging behaviour (Bromely & Emerson, 1995), it is likely that challenging behaviour may be perceived as being aversive (Hastings, 2002; 2005), therefore, staff behaviour (e.g. providing positive interaction with the service user) will remove or reduce the challenging behaviour, thus the behavioural response (positive interaction) will be negatively reinforced and will be more likely to re-occur in the future (Hastings, 2002; 2005).

1.6.3 Ecological Model

Ecological factors in relation to challenging behaviour are concerned with the interaction of the person with a learning disability and their environment (Murphy, 1994). There are specific environmental characteristics which have been identified as increasing the adversity of the environment for people with a learning disability. These include the individual having difficulty understanding staff communication, low levels of social contact both from staff and other service users, barren unstimulating environments, and rigid regimes which provide limited opportunities to access desirable objects or activities (McGill & Toogood, 1994).

McGill (1993) argued that when attempting to understand the development and maintenance of challenging behaviour, a person must take into account all aspects of the person and their environment and the interaction between the factors.

1.7 Management of Challenging Behaviour – The Current Evidence Base

1.7.1 Clinical Practice Guidelines

Ball et al., (2004) published clinical practice guidelines on the use of psychological interventions for severely challenging behaviours shown by people with learning disabilities. These guidelines are based on a detailed review of the relevant literature, conference of clinicians, advice from experts in the field and an extensive consultation process. For each guideline there is an indication of the level of evidence that supports it, using the following categories:

Level 1: evidence from well-designed randomised controlled trials, meta-analyses or systematic reviews

Level 2: evidence from well-designed cohort or case controlled studies (this includes well designed single case (n=1) experimental studies)

Level 3: evidence from uncontrolled studies or clinical consensus

(Ball et al., 2004)

Fifty-one guidelines were rated according to the above categorisation. Of the 51, five were supported by level 1, 10 were supported by level 2, and 36 were supported by level 3 evidence. The guidelines were also identified as either ‘essential’ (must always be followed) or ‘good’ practice (ought to be followed). It is advised that the essential practice guidelines constitute a minimum standard and psychologists not adhering to these standards would risk bad practice. Of the 51 guidelines identified, 15 were rated as ‘essential’, three of which were supported by level 1 evidence, two were supported by level 2 evidence and six were supported by level 3 evidence. It is

argued that this highlights the need for a stronger evidence base for interventions in the management of challenging behaviour and people with learning disabilities (Cullen, 1999; Willner, 2005). For the purpose of the current study, only guidelines with the strongest support are outlined below:

Summary of guidelines identified as ‘essential’ practice supported by Level 1 evidence (see Appendix II for the full Guidelines)

- A functional analysis of the behaviour(s) should be used to guide the intervention.
- The intervention will be most effective if the focus is on developing a functionally equivalent behaviour.
- There are ethical concerns with the use of punishment as a management strategy, and it should never be implemented without a detailed functional analysis and should never be used as the sole intervention strategy.

Summary of guidelines identified as ‘good’ practice supported by Level 1 evidence (see Appendix III for the full Guidelines)

- The use of extinction should be limited and only considered under certain situation
- Interventions should be evaluated

The evidence in support of carrying out a functional analysis to guide intervention would appear to be unequivocal. Evaluation of the effectiveness of intervention approaches has been conducted through meta-analysis. Several reviews have been conducted, mostly on single case experimental designs. It was concluded that

behavioural interventions (applied behavioural analysis) based on functional analysis can improve several types of problem behaviours (Didden *et al.*, 1997; Didden *et al.*, 2006; Hassiotis & Hall, 2009; Harvey *et al.*, 2009; Scotti *et al.*, 1991).

The RCP, BPS, & RCSLT (2007) clinical and service guidelines advocate that once the function has been established, this provides the basis for individualised supports. The approach promoted in this document is positive behavioural support (LaVigna & Willis, 1995) which incorporates the principles of applied behavioural analysis, the normalisation/inclusion movement and person-centred values (RCP, BPS, & RCSLT, 2007).

1.7. 2 Applied Behaviour Analysis and Positive Behavioural Support

Research has demonstrated that challenging behaviours can in theory, following the principles of operant learning, be “unlearned”. The principles of operant learning have been demonstrated to be effective in reducing challenging behaviour through applied behavioural analysis (ABA) approaches such as stimulus control, extinction, differential reinforcement of other appropriate behaviours, time-out from positive reinforcement and other punishment techniques (Murphy & Oliver, 1987 as cited in Murphy, 1994). In the late 1980s, the emphasis shifted from merely reducing challenging behaviours to promoting more positive alternative behaviours. Positive behavioural support (PBS) emerged following controversy around the continued use of ‘aversive’ approaches in the management of challenging behaviour (Allen *et al.*, 2005). Aversive approaches can be defined in behavioural terms as something happening to a person which they find unpleasant and therefore seek to avoid in the future (Allen *et al.*, 2005). The types of aversive approaches used included the application of forced body movement, noxious chemicals (ammonia placed under the nose), electric shocks and the contingent removal of preferred items/activities (Scotti

et al., 1991). Emerson & McGill (1989) pointed out that the weakness of ABA is that it provides a technology for intervention, however does not have a values base governing how it should be applied, therefore, it has been argued that despite its effectiveness (e.g. Didden *et al.*, 1997; Didden *et al.*, 2006; Scotti *et al.*, 1991) it could easily be abused. Emerson & McGill (1989) argued that positive behavioural support emerged as a values-led alternative to ABA. There is a view to move away from measuring outcomes for challenging behaviour based solely on a reduction of behaviours, and towards quality of life measures (Carr *et al.*, 1999).

1.7.3 Positive Behaviour Support ‘tools’.

Positive behavioural support is a multi-element approach which includes proactive and reactive strategies. Proactive strategies are designed to produce changes over time, whereas reactive strategies are designed to manage the behaviour at the time it occurs (Lavigna & Willis, 2005; Allen *et al.*, 2005).

1.7.3.1 Proactive Strategies

- Ecological Changes

As previously discussed, there are several environmental factors which may impact on the development and maintenance of challenging behaviours (Baker *et al.*, 1998). The primary aim of ecological changes is to “smooth the fit” between the person and his or her environment by modifying the environment (Lavigna & Willis, 2005, p. 18). Examples of ecological changes include changing the person’s setting, changing the number and quality of interactions, changing the instructional methods used, changing instructional goals and/or removing or controlling temperature or noise (Lavigna & Willis, 2005).

- Positive Programming

Positive programming is concerned with changing the person's skills to enable them to cope better with their environment, and is reported to reflect the constructional underpinning of multi-element positive practices. The aim is to increase the number of alternative behaviour-reinforcement sets to which the person has access (Goldiamond, 1974). There are four variations of positive programming; general skills development, functionally equivalent, functionally related and coping/tolerance skills. LaVigna & Willis (2005) have highlighted coping skills to be the most important as it is often overlooked in support plans. Stressful events/situations are often the antecedents to challenging behaviour, and ecologically they can be minimised, however the antecedents may need to be re-introduced by supporting the person with learning disabilities to cope with or tolerate the event (LaVigna, & Willis, 2005).

- Focused Support

It is anticipated that as ecological changes and positive programming may take time to implement, more rapid changes may be required through the application of focused support strategies. These would traditionally be labelled 'behavioural interventions' and do not have a constructive element (Baker *et al.*, 1998). They include strategies such as schedules of reinforcement, antecedent control, stimulus satiation and stimulus control (Donnellan *et al.*, 1988).

1.7.3.2 Reactive Strategies

The above proactive strategies do not inform staff what to do at the time challenging behaviours occur. The primary aim with reactive strategies is the safety of the individual and those around them (LaVigna & Willis, 2005; Willis & LaVigna,

1996). There is no focus on producing long term changes to behaviour, therefore even if a person is distracted with a sufficiently reinforcing activity it is hoped that this strategy would be included in a multi-element support plan to prevent the occurrence of a counter-therapeutic effect although the immediate response to the challenging behaviour may have reinforced it (Baker *et al.*, 1998). Specific strategies include ignoring the behaviour, distraction and diversion, active listening, and verbal calming. There is some concern in the literature regarding the use of physical intervention, however, LaVigna & Willis (1996) have acknowledged that for some individuals in crisis situations, the use of physical intervention is necessary. Baker *et al.* (1998) reported that it is paramount that there are robust policies in place, recording procedures, specific individual guidelines for each service user and trained and competent staff implementing the physical interventions.

Summary of section:

- When attempting to understand the development and maintenance of challenging behaviour, a person must take into account all aspects of the person and their environment and the interaction between the factors.
- The current evidence base endorses positive behavioural support (PBS) as “best practice” in the management of challenging behaviours. This involves reactive strategies to manage the behaviours as they arise and proactive strategies to reduce the frequency of the behaviours. All interventions must be guided by a detailed functional analysis.

The next section will consider the importance of staff responses before reviewing the literature on actual staff responses.

1.8 The role of staff

1.8.1 Importance of staff responses

As previously noted, the interaction between the person and their environment is pertinent to gaining a full understanding of the challenging behaviour. Staff in the person's environment are therefore likely to play an important role in the antecedents and consequences of the behaviour, and potentially developing and maintaining it. Indeed, Hastings & Remington (1994a) described staff responses as "sources of socially mediating reinforcement" (Hastings & Remington, 1994a: p.425). Hastings (2002) described three sources of evidence which support this view. Firstly, experimental studies which manipulated conditions based on a functional analysis, have shown that particular scripted responses of participants led to successful interventions for challenging behaviour (Iwata *et al.*, 1994). Secondly, the evidence base on behavioural intervention programmes suggests that when staff are instructed to respond to challenging behaviour in a particular way, there is a reduction in the frequency of challenging behaviour (Carr *et al.*, 1999; Didden *et al.*, 1997; Scotti *et al.*, 1991). Finally, self-report studies have also described how staff tend to respond to behaviours in ways which would suggest that their responses have functioned to maintain the behaviours (Hastings & Remington, 1994a).

1.8.2 Actual staff behavioural responses to challenging behaviour

On a general level, observation studies report that staff typically spend a small percentage of time with clients and tend to fill their time with administration and housekeeping tasks (e.g. Hile & Walbran, 1991). A positive relationship has also been found between incidents of challenging behaviour and amount of attention provided by staff (Felce *et al.*, 1987), although the quality of these interactions is not necessarily positive in nature (Hastings & Remington, 1994a). There are few studies which have examined staff immediate responses to challenging behaviour. Early

self-report studies described a hierarchy of staff responses to challenging behaviour (Ingliatela *et al.* 1986; Salovita, 2002). Figure 3 is an illustration of the hierarchy of responses found in these studies:

No response → verbal → ignore → physical → call for additional support

Figure 3: Hierarchy of staff responses to challenging behaviour

Bromley and Emerson (1993) examined staff responses to different topographies of challenging behaviour. For aggressive, self-injurious and destructive behaviour, staff reported using distraction most frequently across all behaviours (92%, 72%, 86% respectively), however also reported the frequent use of seclusion for aggressive behaviour (67%) and physical restraint for both self-injurious (36%) and destructive behaviours (47%). Of interest, is the implication that these responses may have in the long-term maintenance of challenging behaviours. Hastings (1996) suggested that although the most frequently reported response strategies are of a social nature, and thus will likely maintain some behaviours, the concerns that staff have in the short-term may be different to their concerns regarding the longer-term management of these behaviours. First to explore this, Hastings (1996) asked staff to report how they would respond “there and then” and “in the longer-term” and why they would respond in these ways to three vignettes each describing three different topographies of aggressive, self-injurious and stereotyped behaviours. In the immediate situation, staff reported they would be more likely to use restraint for self-injurious behaviour in order to prevent harm. For the aggressive behaviour, staff reported that they would make the environment safe and in the longer term would engage the client in more activities and would try to find out the cause of the behaviour. For stereotyped behaviours, staff reported that they would be more likely to use distraction in the short-term and would be less likely to report wanting to find a cause for the

behaviour in the longer-term (Hastings, 1996). Hastings (1996) concluded that the immediate responses would likely maintain the behaviours as they are not concerned with finding a cause; however, staffs' longer term goals appear to reflect more closely with the evidence base found in the best practice guidelines (Ball et al., 2004; RCP, BPS & RCSLT, 2007). These conclusions were replicated in a community sample (Watt et al., 1997).

Summary of Section:

- On a theoretical and empirical level, staff responses to challenging behaviour play an important role in the development and maintenance of challenging behaviour.
- Studies have found that staff tend to respond in ways which may maintain challenging behaviour in the short term; however, in the long term respond in ways which reflect the evidence base.

Different models have been proposed to help understand staffs' responses to challenging behaviour. These models will now be outlined and discussed below.

1.9 Understanding staffs' responses to challenging behaviour

1.9.1 Knowledge Deficit

In order for staff to respond to challenging behaviour using positive behavioural support approaches, staff must have the knowledge of such approaches (McGill, *et al.*, 2007), however, knowledge has been found to be limited in health and social care staff (McKenzie *et al.*, 1999). Staff training on positive behavioural support approaches has been found to be effective in increasing staff knowledge in this area (e.g. Lowe *et al.*, 2007b; McGill *et al.*, 2007; McKenzie *et al.*, 2000), however, there are important methodological issues to consider. These include measures of knowledge and actual staff practice and the relationship between them.

McGill *et al.* (2007) measured knowledge and intended staff response using the knowledge and action subscales from the Self-Injurious Behavioural Understanding Questionnaire (SIBUQ; Oliver *et al.*, 1996). The SIBUQ is a multiple choice design, therefore staff responses may have been affected by response bias, and intended action does not necessarily transfer to actual staff responses to challenging behaviour. Lowe *et al.*, (2007b) measured a wide range of knowledge which included knowledge of services, supervision, person-centred planning and management of challenging behaviour. However, knowledge in these areas was not evaluated in relation to staff performance. Finally, McKenzie *et al.* (2000) defined knowledge according to the evidence base on management of challenging behaviour and rated open-ended questions according to the best practice criteria. This study did not measure actual staff practice, however in a second study McKenzie *et al.* (2002) carried out a Periodic Service Review (LaVigna *et al.*, 1994) and found that the training carried out in the McKenzie *et al.* (2000) study also significantly improved practice. However, the latter study used a different sample, therefore comparisons between knowledge and actual practice were more difficult to establish. In addition, due to the time commitment required to complete a Periodic Service Review, there was a small sample size (N=14). Further research is required to investigate the significance of knowledge in relation to actual staff practice.

1.9.2 Organisational

While challenging behaviour has been recognised as a stressor for staff, it is reported that the organisational context can buffer the impact (Allen, 1999). Hatton *et al.* (1997) found a relationship between organisational factors of poor support, high workloads, conflicting demands in work situations, lack of job clarity and alienation from organisation with poor staff outcomes of job search, sickness leave and high

levels of general and work-related stress. Allen (1999) reported that the effectiveness of staff training on actual staff practice will also depend on whether there is a supportive management system in place and that staff should have an effective leader to promote positive behavioural support approaches. Following a review of the literature, Hastings (2005) reported that the majority of the research on organisational culture has been conducted through qualitative methods, and noted that a common theme identified is the greater impact of informal working culture compared to formal policies and procedures.

1.9.3 Cognitive-Emotional

1.9.3.1 Attribution Theory

Human behaviour is a complex process, the understanding of which has been greatly enhanced by attribution theory (Heider, 1958). Attribution theory has important relations with cognitive behavioural theories of learning (Munton *et al.*, 1999), which propose that people construct mental models; representations of the world and how it operates, which are then used to make predictions about reality (Beck, 1975). Whereas behavioural theories of learning require concrete experiences of positive and negative reinforcement, cognitive behavioural theories argue that people can build and modify their mental models without concrete experience. Munton *et al.* (1999) used an example of a child who does not need to get burned to learn that fires are dangerous or does not need to be involved in a car accident to learn that moving cars are dangerous. Thus, parents can modify a child's internal model of the world to cause a change in their behaviour (Munton *et al.*, 1999). Therefore, to understand and predict human behaviour, it is important to understand something about people's internal mental models of their world, and most importantly, Munton *et al.* (1999) argues, how people see the relationship between events (and behaviour) and causes. These are people's attributions; thoughts or beliefs about the relationships between a

cause and an outcome and are reported to be of great significance when trying to understand and change behaviour (Munton *et al.*, 1999).

1.9.3.2 Development of attributional dimensions

Attributions can be described in terms of different dimensions, whereby each dimension provides information about different aspects of a causal belief (Munton *et al.*, 1999). Rating an attribution on different dimensions provides insight into how a belief about causality is likely to influence behaviour (Munton *et al.*, 1999). Concerns have been raised regarding the consistency with which attributional dimensions are defined. Therefore, following examination of the different dimensions and definitions that people have used in attribution research, Munton *et al.* (1999), proposed five dimensions, representing the broad perspectives captured in the literature; locus, stability and controllability. The dimensions are internal-external, personal-universal, stable-unstable, global-specific, controllable-uncontrollable (See Appendix IV for a description of each of these dimensions adopted from Snow *et al.*, 2007).

1.9.3.3 Attributions in Practice

Munton and colleagues (1999) described the clinical application of attribution theory in various different contexts. Within a medical context, the controllable-uncontrollable dimension is of particular interest, especially when it comes to taking responsibility for one's own health. This can be illustrated by studies which have examined the impact of different methods of treatment (medication versus cognitive therapy) on the controllability attributions of solutions to one's own difficulties/symptoms (Munton *et al.*, 1999). If people believe that medication is the solution, and not their own efforts, they are less likely to assume control and manage their own symptoms/difficulties. This has been applied to patients' attributions about

managing depression (Mechanic *et al.*, 1994) and parents' attributions about managing behavioural difficulties in children diagnosed with Attention Deficit Disorder (Johnston & Freeman, 1997).

Given the value of attribution theory in helping to understand behavioural outcomes, it is not surprising that this has been an area of increasing interest within a learning disability context. Studies which have explored staff causal attributions have examined the attributions regarding a specified individual, a fictitious individual, or have not specified a target (Hasting, 1995). Bromley & Emerson (1995) revealed that the five most frequently used responses regarding a specified individual were internal psychological state or mood (41%), past environment (26%), current environment (26%), self-stimulation (24%), and a form of communication or control of others (23%). Hastings (1995) reported that 74% of staff rated challenging behaviour as intentional. A consistent theme in the literature is that factors which staff could have some control over (e.g. communication) are perceived by staff to be less likely causes of challenging behaviour than factors which staff have less control over (e.g. clients history, or accommodation; Allen, 1999b). Allen (1999b) proposed that under these circumstances, this may lead to a reduction in staffs' motivation that they could influence and manage the challenging behaviour.

A number of factors that may influence staff attributions have been identified. These include level of learning disability (Tyan & Allen, 2002), topography or form of challenging behaviour (Stanley & Standon, 2000), experience of staff (Hastings *et al.*, 1997), and the function of challenging behaviour (Hastings *et al.*, 2003). Given the importance of staff responses in the development and maintenance of challenging behaviour, behavioural researchers have been interested in how staff attributions

impact on staff behavioural responses, and the model which has received most interest is Weiner's model of helping behaviour (1980, 1986).

1.9.3.4 Weiner's (1980, 1986) Model of Helping Behaviour.

Weiner (1980, 1986) proposed a sequential understanding of thoughts, feelings and actions. Through six experiments, Weiner (1980) simulated judgement paradigms to investigate the attributional and emotional determinants of likely helping behaviours. The first experiment described a scenario of lending class notes to examine the influence that attributions of locus, stability and control would have on judgements of help giving. The findings demonstrated that participants were less likely to lend their class notes when the lack of notes was attributed to internal and controllable causes. Weiner (1980) then suggested that causal attributions that are internal and controllable would generate negative affect (anger and disgust) and promote avoidance (unhelpful) behaviours. On the other hand, causal attributions that are external to or uncontrollable to the person, would bring about positive affect (sympathy) and would in turn encourage more helpful behaviours (responding). Weiner (1980) examined and supported these hypotheses in another five experiments which simulated a disabled or a drunk person requiring help (this scenario was taken from previous research; Paliavin *et al.*, 1969 as cited in Weiner, 1980). Weiner (1986) later extended this model to include the attributional dimension of stability, whereby, if someone attributes the cause of a behaviour to be stable, then there would be little hope that they would effect change and so would be less likely to offer help.

1.9.3.5 Application of Weiner's Model - a learning disability context

Within this theoretical framework, staff who work with people who display challenging behaviour, will be more likely to provide help if they perceive the causes

of the behaviour as being uncontrollable, unstable and external to the person with a learning disability. On the other hand, if the behaviour is perceived to be controllable, stable and internal to the person, this will give rise to emotions of less sympathy and anger, which will make the staff less likely to provide help (Hastings *et al.*, 2003). Figure 4 and Figure 5 illustrate how this may work in theory:

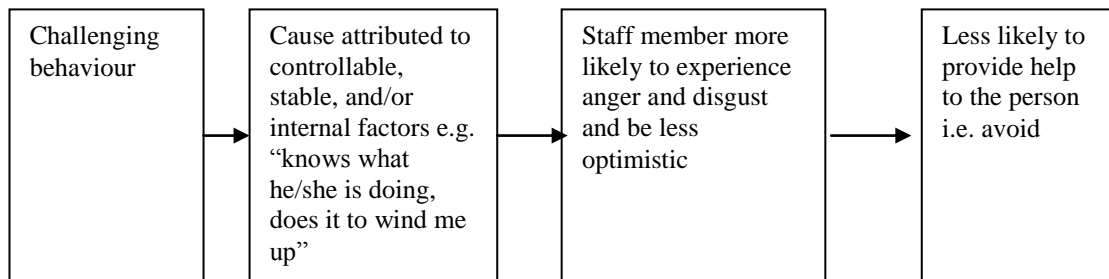


Figure 4: Example of the application of Weiner's (1980, 1986) model of helping behaviour within a learning disability context – avoidance

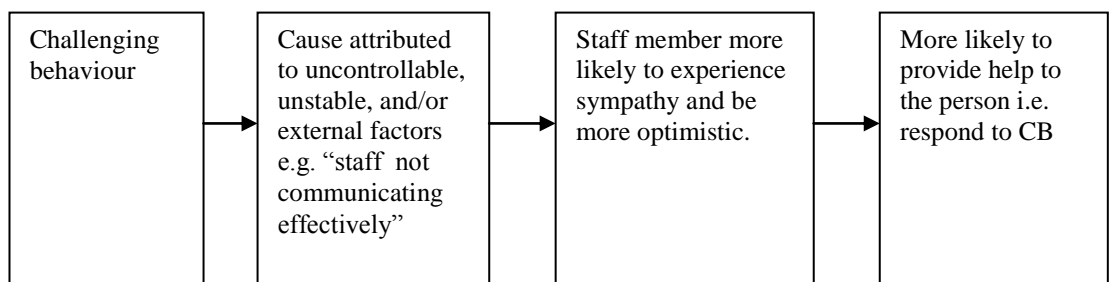


Figure 5: Example of the application of Weiner's (1980, 1986) model of helping behaviour within a learning disability context – helping behaviour

A number of studies have directly examined Weiner's (1980, 1986) model of helping behaviour within a learning disability context. Appendix V is a summary (outcome measures and relevant findings) of the main studies which have directly examined the core components of Weiner's (1980, 1986) model; attributions, emotional responses/optimism and helping. There have been three recent literature reviews on attribution research, which have reported that the findings, at best, show only partial support for the model (Andrews, 2008; Lambrechts *et al.*, 2008; Willner & Smith,

2008). There are a number of important conceptual, theoretical and methodological factors to consider with regard to the existing literature.

1.9.3.6 Methodological Limitations

- Definition of Helping Behaviour

The term ‘helping behaviour’ is poorly defined in each of the studies, and is therefore open to interpretation, weakening the validity and reliability of its measurement (Jones & Hastings, 2003). Several authors (Dagnan, *et al.*, 1998; Hill & Dagnan, 2002; Lucas, *et al.*, 2008; Sharrock, *et al.*, 1990; Stanley & Standon, 2000; Wanless & Jahoda, 2002; Wilner & Smith, 2008b) used a single item 7-point rating scale to measure ‘staffs’ willingness to provide help’, however failed to ask the participants what they would actually do (Jones & Hastings, 2003). Given the evidence base that challenging behaviours are often positively or negatively reinforced by staff responses to the behaviour (Hastings, 1995), helping behaviour as defined by willingness to provide help may not actually be helpful (Rose & Rose, 2005).

Jones & Hastings (2003) defined helping behaviour as ‘intervening in ways that were less likely to reinforce challenging behaviour’. The authors compiled a list of 14 different ways in which staff may respond to challenging behaviour, and participants were requested to consider each response with regard to two videos depicting two different functions (escape versus attention maintained behaviour). This method is however limited in that it does not provide evidence of predictive validity for the individual acts of care staff. The study did not examine behaviour in response to real incidents of challenging behaviour and the use of predefined responses may have introduced a response bias (Stanley & Standon, 2000). Only one study has examined the relationship between ‘willingness to help’ and ‘actual helping behaviour’ (Bailey

et al., 2006). Bailey *et al.* (2006) found that willingness to provide help had an inverse relationship with ‘collaborative assistance’ (actual helping behaviour) and had a positive relationship with ‘not present’ (avoidance of behaviour). A methodological limitation to this study is that it only examined staff behavioural responses within a relatively short timeframe. Indeed, Hastings (1996) argued that this limitation is present in most observational studies. As previously discussed, Hastings (1996) found that although staffs’ immediate responses may maintain the behaviour, their longer-term goals of increased positive activity and finding out the cause of the behaviour are more consistent with the goals of many psychological interventions (reactive strategies, functional analysis, ecological change; Hastings, 1996). The findings from the Hastings (1996) study highlight the limitations of defining “helping” as an immediate response.

- Representation of Challenging Behaviour

The majority of research utilised vignettes to represent challenging behaviour (Dagnan *et al.*, 1998; Hill & Dagnon, 2002; Sharrock, *et al.*, 1990; Stanley & Standon, 2000; Wilner & Smith, 2008b). It is well documented that the use of vignettes may represent an abstract event (Wilner & Smith, 2008a) and the meaning of such an event may not hold any personal significance for the care staff (Wanless & Jahoda, 2003). Edwards & Potter (1993) have highlighted that the studies which have used real life incidents or videos, have found the least support for Weiner’s (1980, 1986) model, which raises the question of whether vignettes bias responses. Indeed, Wanless & Jahoda (2002) compared real incidents with vignettes, and it was concluded that care staff reported feeling more intense emotions towards the real incidents of challenging behaviour, and also found that care staff rated the person and their behaviour significantly more negatively regarding a real incident of challenging behaviour compared to vignettes. Using real incidents, the authors found

limited support for Weiner's (1980, 1986) model (Wanless & Jahoda, 2002). However, Lucas *et al.* (2009) later found support for Weiner's (1980, 1986) model using real events compared to vignettes. It was acknowledged, however, that the results of this study may have been affected by order bias (Lucas, *et al.*, 2009). The main advantage of using real incidents of challenging behaviour is that it enhances ecological validity, however, the costs include reduced experimental control, one of the main advantages of utilising vignettes.

- Measures used to assess attributions

Attribution constructs are commonly assessed with questionnaires such as the amended Attributional Style Questionnaire (ASQ; Peterson *et al.*, 1982), Challenging Behaviour Attribution Scale (CHABA; Hastings, 1997b), and Self Injurious Behaviour Understanding Questionnaire (SIBUQ, Oliver *et al.*, 1996). In a recent review of these measures, Andrews (2008) acknowledged the limitations and highlighted, "that whilst the use of these measures quantifies responses and allows for statistical testing, they may not be entirely reliable or valid" (Andrews, 2008; p.59). Indeed, Andrews (2008) reported that intervention studies have questioned the reliability and validity of the CHABA, highlighting that some of the subscales were reported to have low internal consistency (Tierney *et al.*, 2007), poor reliability (McGill *et al.*, 2007) and lack content validity (Grey *et al.*, 2002). Andrews (2008) also noted that some of the subscales imply intentionality of behaviour (Grey *et al.*, 2002, McGill *et al.*, 2007) and do not provide the opportunity for reactive strategies which would be an appropriate approach as part of a multi-element behavioural support plan (Grey *et al.*, 2002). In addition, McGill *et al.* (2007) and Ferris (2008) compared the SIBUQ and the CHABA in measuring pre-and post-causal attributions following training, however, results indicated that they are measuring different things, which questions the construct validity. Rose and Rose (2005) have

specifically questioned the use of scaled measures to assess staff attributions of challenging behaviour, and stated that they offer limited support for the predicted relationships between variables of Weiner's (1980, 1986) model of helping behaviour.

An alternative to scaled measures is one which will allow the researcher to quantify qualitative responses to open-ended questions, such as the Leeds Attributional Coding System (LACS, Stratton *et al.*, 1986). The LACS is a binary coding system which assigns a score of 0 or 1 to the opposite poles of each attributional dimension. The LACS allows for coding of five bipolar attributions, internal-external, stable-unstable, personal-universal, controllable-uncontrollable and global-specific (Stratton *et al.*, 1986). An amended version of the LACS (Brewin *et al.*, 1991) has been used to rate staff attributions of challenging behaviour and is reported to have adequate inter-rater reliability (Noone *et al.*, 2006; Rae, 2007; Ferris, 2008; Snow *et al.*, 2007) and has high ecological validity as it does not constrain the parameters of the responses given by the participants.

- Concept of Attributions

Following on from the above discussion an important issue which has yet to be considered is how attributions are conceptualised within Weiner's (1980, 1986) model of helping behaviour. The literature on the development of attributions suggests that specific attributions are either present or are not present, and Weiner's model distinguishes between the presence of helpful (external, uncontrollable, unstable, universal) and unhelpful attributions (internal, controllable, stable, personal) with regard to intention to help. However, the scaled measures outlined above appear to be measuring attributions as variable concepts according to the degree to which an individual rates a causal belief, rather than as constant variables.

However it is proposed that Weiner (1980, 1986) did not make the distinction between degree of attribution, and within a learning disability context the attributions in Weiner's (1980, 1986) model may not be sufficiently powerful as separate independent variables, however may produce more predictive power when helpful attributions are combined. For example, is helping behaviour more likely when all helpful attributions are present and less likely when all unhelpful attributions are present, or is the variance of helping behaviour related to the degree or strength of these attributions as separate independent constructs?

- Statistical Analysis

Finally, it is important to note that some of the studies (Bailey *et al.*, 2006; Jones & Hastings, 2003; Lucas, *et al.*, 2009; Wanless & Jahoda, 2002) only examined their data using correlation analysis. Caution must be taken when interpreting correlation coefficients as they do not provide indication of the direction of causality. Field (2009) highlighted two reasons for this: firstly, there may be other measured or unmeasured variables impacting on the results and, secondly, there is no statistical reason to explain which variable causes which to change. Regression analysis provides further insight into the predictive quality of independent variables on a dependent variable (Field, 2009). Although correlation analysis may suggest limited significant relationships between a variable and any other variables, a regression analysis takes into account any inter-relationship between variables in predicting a dependent variable. On the other hand, a high correlation coefficient between two variables may have too much shared variance, and may be lost in the regression. It is positive that some of the studies have applied regression analysis, however results must be interpreted with caution due to the small sample sizes (see Appendix V). Finally, the clinical significance of attributions in predicting helping behaviour

would be enhanced if attributions continued to be significant when regressed alongside another key variable, such as knowledge.

Summary of Section:

- It has been identified that staff working with people who display challenging behaviours have limited knowledge of appropriate management approaches, however studies have only shown partial support that an increase in knowledge produces improvements in practice. It has also been proposed that there are formal and informal organisational cultures which are likely to impact on staff responses to challenging behaviour.
- Weiner's (1980, 1986) model of helping behaviour provides a useful model in understanding the cognitive-emotional aspects of staff responses to challenging behaviour. A number of studies have examined the application of this model, however evidence provides only partial support and there are a number of methodological, conceptual and statistical issues that need to be addressed.

Given the conceptual, theoretical and methodological difficulties in applying Weiner's (1980, 1986) theory to understanding staff behavioural responses to challenging behaviour, several researchers have claimed that this model is too simplistic and have proposed alternative models to explain staff behavioural responses to challenging behaviour. Influential in the literature has been Hastings (2002) proposal that negative emotional reactions to challenging behaviour accumulate over time to impact on staff stress and burnout levels.

1.10 The long-term impact of negative emotions

1.10.1 The relationship between staff stress and staff behaviour

The implications of staff stress for people with challenging behaviour have been related to staff outcomes of staff turnover and absenteeism and the impact that stress has on staff interaction behaviour (Rose & Rose, 2005). With regard to the latter, three research designs have been used to investigate this. Rose *et al.*, (1998) asked managers and staff to identify high and low stress community homes which was validated in reports of anxiety and demands at work. Rose *et al.*, (1998) found that staff in the high stress houses were less likely to interact with clients, less likely to engage in positive and assistance interactions, and engaged less in personal care. Lawson & O'Brien (1994) carried out a correlational approach and examined relationships between staff self-reports of burn-out and observations of staff behaviour. The findings were consistent with the Rose *et al.*, (1998) study in that there was a significant negative relationship between high emotional exhaustion and positive interaction. Rose, *et al.* (1998) compared an organisational stress-reduction intervention in an experimental and control group (no intervention). The results showed that the intervention group reported lower levels of anxiety post-intervention and an increase in perceived supports. However, the observational data showed relatively little change over time on many of the behaviours observed, although modest improvements were seen in the number of interactions both of a positive and assistive nature. By contrast, Reynolds (1997) found counselling rather than organisational interventions to be more effective in improving staff psychological well-being. Unfortunately, this study did not measure staff interaction outcomes. Although there are a number of methodological issues to consider (correlation analysis, self-report, short follow-up periods), the above studies show that there appears to be a link between staff experience of stress and their interaction with

clients which has led researchers to focus on the variables which may be predictive of staff stress and burnout. The majority of the research has focussed on variables external to the staff, for example organisational factors (Hatton & Emerson, 1993), topography of challenging behaviour (Hatton *et al.*, 1999), and severity and frequency of challenging behaviour (Hastings & Brown, 2002; Jenkins *et al.*, 1997). However, there is limited clinical significance in these relationships unless there is a link to how stress impacts on the way in which staff respond to challenging behaviour.

1.10.2 The relationship between staff stress and attributions

Rose and Rose (2005) acknowledged the need to integrate the literature on attributions and stress to develop an overarching conceptual framework as to why staff behave in the way that they do in response to challenging behaviour. Within this framework, Rose and Rose (2005) hypothesised that in a two-step process, whereby people make automatic assumptions regarding a person's disposition, and then adjust accordingly; if staff are experiencing high stress levels, they will not be able to make effortful adjustment in the second stage of the process due to being distracted, and preoccupied by their own stress experiences and will therefore make attributions that are internal, controllable and stable to the client. Using structural equation modelling (SEM), Rose and Rose (2005) did not find an explicit role for stress on attributions and Wiener's (1980, 1986) model was not supported. However, the "helping behaviour" variable was dropped as the data was not normally distributed and could not be transformed.

It is clear that there is a significant degree of variance with regard to support for Weiner's (1980, 1986) model of helping behaviour and although on a general observational level, stress has been linked to staff interaction behaviour, the Rose

and Rose (2005) study does not add any further understanding to how the literature can be integrated under an overarching conceptual framework to help understand staff responses to challenging behaviour. However, an area which may help to explain some of this variance and has begun to receive more attention, is staff individual differences.

1.10.3 Attributions, Helping and Staff Individual Differences

Although the study did not include an outcome measure of staff helping behaviour, Weigel *et al.*, (2006) found that there were significant differences between staff who reported high or low expressed emotion with how they rated causes for challenging behaviour. Staff who reported low expressed emotion were more likely to attribute challenging behaviour as being external and uncontrollable to the client, whereas staff who reported high expressed emotion were more likely to make attributions that were internal and controllable to the client. Hill and Dagnan (2002) explored the individual differences in coping strategies of staff and found that both wishful thinking (negative relationship) and practical coping strategy (positive relationship) were significant and independent predictors of the offer of help, rather than actual help. Furthermore, Racza (2005) conducted a focus group enquiry into stress experienced by staff working with people with challenging behaviours in three community homes. Content analysis revealed issues relating to what coping strategies staff employ (wishful thinking) and stress-related outcomes for staff, however not all staff expressed stress-related consequences. For example, some reported positive experiences of confidence in managing challenging behaviour and love of working with the residents, whereas others reported dealing with high stress levels through drinking alcohol, taking Prozac, and looking for another job (Racza, 2005). Although there are clear limitations to how these results can be generalised due to the exploratory nature and the small sample size of the study, it offers another

dimension into understanding the individual differences of how staff respond in the short-term (emotionally, cognitively and behaviourally) and cope in the longer-term to similar experiences. This highlights the issue of whether there are specific individual differences in how staff regulate their own emotions and whether individual differences in emotion regulation strategies would moderate the effects of variables on helping behaviour.

Individual differences in emotion regulation styles have been reported to have implications for affective responding, cognitive and social functioning, and well-being (Gross & John, 2003). This suggests the development of a model which may integrate research on staff attributions and emotional responses to challenging behaviour with research on stress and burnout and how these factors may contribute to actual staff responses to challenging behaviour.

Summary of Section:

- It has been proposed that negative emotional reactions to challenging behaviour accumulate over time to impact on staff stress and burnout levels. Studies have reported a link between staff stress and general interaction behaviour.
- It has been recognised that staff individual differences, such as levels of expressed emotion and coping strategies, may explain some of the variation in studies examining Weiner's (1980, 1986) model.
- Individual differences in emotion regulation style may help to integrate the research on staff attributions and emotional responses to challenging behaviour with research on stress and burnout in staff.

This next section will describe the conceptual foundations of emotion regulation, before outlining the experimental and individual difference research of two emotion regulation strategies, cognitive reappraisal and expressive suppression and their implications for affective responding, cognitive and social functioning, and well-being.

1.11 Emotion Regulation Styles

1.11.1 Conceptual Foundations

Gross & Thompson (2007) argued that, to understand emotion regulation, one must first understand what is being regulated:

“...emotion is a term that was lifted from common language, and that refers to an astonishing array of happenings, from the mild to the intense, the brief to extended, the simple to complex, and the private to public” (Gross & Thompson, 2007, p. 4).

Gross & Thompson (2007) refer to a “modal model” understanding of emotion. It is argued that it represents major points of convergence among emotion theorists (Ekman, 1972; Fridja, 1986), and has three core features. Firstly, it is generally accepted that the emotion-generative process begins when an external or internal event which signal to an individual that something important may be at stake. Secondly, when this event is attended to and evaluated in certain ways, emotional response tendencies (subjective experience, behaviour, and central and peripheral physiology) are triggered (Lang, 1995). Thirdly, although some individuals express these emotional response tendencies, it is not obligatory (James, 1884 as cited in Gross, 1998). It is discrepancies between emotional response tendencies and behaviour which raises the question of how, why and when individuals may want to regulate their emotions (Gross, 1998) and the costs and benefits of doing so.

1.11.2 Function of emotions

Gross (1998) reported that historically emotions were seen as nonspecific, disruptive activation states (Hebb, 1949; Young, 1943, as cited in Gross, 1998), however, Keltner & Gross (1999) outlined the development of functional accounts of emotion. A range of intraorganismic and social functions have been documented. These include facilitating decision making (Oatley & Jenkins, 1992), preparing the individual for rapid motor responses (Frijda, 1986), informing us about others' behavioural intentions (Fridlund, 1994), giving us clues as to whether something is good or bad, and scripting our social behaviour (Keltner & Buswell, 1997). Gross (1998) stated that the interest in the functionally adaptive nature of emotions, should not obscure James' (1884, 1894, as cited in Gross, 1998) observation that some emotional response tendencies often require to be modulated, and it is this which determines the final shape of the emotional response (Gross, 1998).

1.11.3 Emotion Regulation

The term 'emotion regulation' refers to a set of processes by which individuals' attempt 'to influence which emotions they have, when they have them, and how these emotions are experienced and expressed' (Gross, *et al.*, 2003, p. 3). This may include conscious or unconscious, controlled or automatic attempts to up- or down-regulate one's own positive or negative emotions (Gross, 1998; Parrot, 1993). Although interest in the concept of emotion regulation has increased over the past three decades, it has origins in psychodynamic theories of psychological defences (Freud, 1946) and psychological theories of stress and coping (Lazarus, 1966) and comes under the umbrella term *affect regulation* along with *coping*, *mood regulation*, and *defences* (Gross, 1998). Gross (1998) made the following distinctions:

- *Coping* involves the management of one's relationship with demands in the environment that taxes one's ability to respond (Lazarus & Folkman, 1984). This also includes unemotional actions to achieve unemotional goals, whereas emotion regulation is concerned with emotions in whatever context they may arise (Gross et al., 2003). Emotion regulation can also be distinguished from emotion-focused coping (Lazarus & Folkman, 1984). Emotion-focused coping refers to actions taken to reduce distressing emotions, whereas emotion regulation refers to the regulation of both positive and negative emotions (Gross, 1998).
- *Mood Regulation* (Parkinson, et al., 1996) can be distinguished from emotion regulation as *mood* is generally viewed as having a longer duration, and lesser intensity than emotion. In addition activities to regulate negative mood states will be more general such as exercise, sleep, and nutrition, and may be less likely to involve responses to specific "objects" (comment from a person, receiving a present, child's behaviour) (Gross et al., 2003).
- *Defences* (Freud, 1946) are relatively stable characteristics which operate outside of one's awareness to decrease the subjective experience of anxiety and other negative affect. Emotion regulation on the other hand, encompasses the full range of emotions, and includes stable individual differences (Gross & John, 2003) and basic processes that operate across individuals (Gross, 1998b).

1.11.4 A Process Model of Emotion Regulation

In an attempt to make sense of the ways in which an individual may attempt to regulate their emotions, Gross (1998a) proposed a process model of emotion regulation in which specific strategies can be differentiated along the timeline of the emotional response. On a general level, strategies can be distinguished as being

antecedent-focussed and response-focussed. Antecedent-focussed strategies (*situation selection, situation modification, attentional deployment, cognitive change*) refer to what an individual does before the emotion response strategies have become fully activated, thus changing behavioural, subjective experience and physiological trajectories. On the other hand, response-focussed strategies (*response modulation*) are applied to manage already activated emotional response tendencies. Figure 6 illustrates the timeline of these specific emotion regulation strategies:

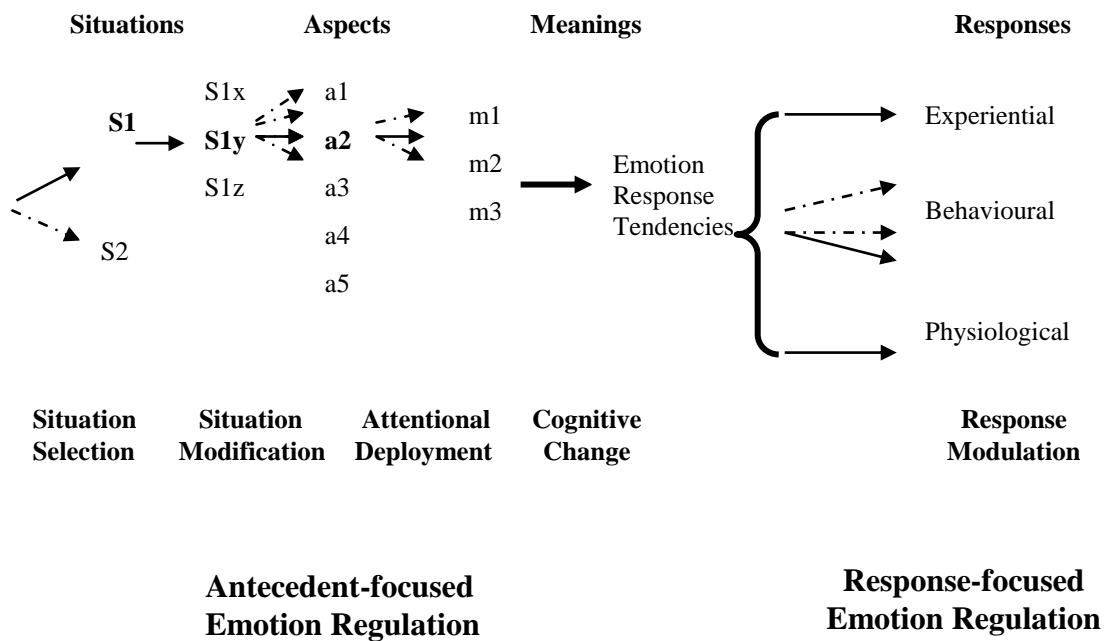


Figure 6: Process Model of Emotion Regulation (Gross, 1998).

The process model will now be outlined with reference to an example drawn from staff working within a learning disability context. *Situation selection* refers to the solid line towards one situation (S1) rather than another (S2), which may include approaching or avoiding certain people, places or activities so as to regulate the emotion (deciding whether to take the service user to the swimming pool or put on the television). Once the situation has been selected, *situation modification* is applied to the current situation (S1), creating different situations (S1x, S1y, S1z;

communicating to the service user using a visual communication system rather than using speech to communicate). *Attentional deployment* refers to deciding which aspects (a1, a2, a3 etc) of the situation you focus upon (focusing on how well the service user has coped with getting undressed rather than the shouting). Once attention has been deployed to an aspect of the situation, *cognitive change* refers to selecting which meaning (m1, m2, m3 etc) you will attach to that aspect of the situation (if challenging behaviour occurs, telling yourself it's because it's hot and he/she has had to wait for you to get changed first, rather than he/she is doing it to show you up in public). Gross (1998a) highlighted that it is this final part, the meaning of the situation, which is crucial, because it determines the experiential, behavioural and physiological trajectory of the response tendencies generated. Finally, *response modulation* refers to attempts to decrease or increase expressive behaviour, but may also involve altering experience or physiology (Gross, 1998a). Empirical support for the process model has focused on the examination of two specific strategies, cognitive re-appraisal and expressive suppression.

1.11.4.1 Cognitive Reappraisal

Cognitive reappraisal is an antecedent-focussed strategy and occurs early on in the emotion-generative process. It involves evaluating a potentially emotion-eliciting situation in such a way as to change the emotional impact by modifying the emotional trajectory before the emotional response tendencies have been fully activated (Gross, 1998a). Lazarus and Alfert (1962) showed that leading participants to view a potentially upsetting surgical procedure in more analytic, objective terms (a training video with actors), decreased their subjective and physiological responses when watching the film. According to this model, when used to down-regulate negative emotions, reappraisal should successfully reduce the subjective and behavioural accounts of negative emotion (Gross, 1998b)

1.11.4.2 Expressive Suppression

Expressive suppression is at the other end of the emotion-generative process, and involves inhibiting expressive behaviour once the emotional response tendencies have been activated (i.e. hiding disappointment when given an unwanted gift). Therefore, when a negative emotion has been activated, suppression may successfully reduce the level of observable expressed negative emotion, however, it may have the unintended side-effect of dampening down the expression of positive emotions (Gross & John, 2003). In addition, suppression will not be effective in reducing the subjective experience of negative emotion, however may leave the experience unresolved and accumulating. Furthermore, it was hypothesised that valuable resources may be used up in continually suppressing negative emotions, which could otherwise be used in social contexts in which the emotions arise. Finally, as suppression relates to a feeling of incongruence between one's inner experience and outer expression (Rogers, 1951), it was suggested that this may leave an individual feeling negative about oneself, left feeling isolated from the self and others (Gross & James, 2003).

1.11.5 Individual Differences – Empirical Findings

Some of these predictions have been tested experimentally and individual differences in affective responding, cognitive and social functioning and implications for general well-being have been examined using the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003; Gross, 1998b; Gross & Levenson, 1993, 1997). The ERQ is a questionnaire which was developed to measure individual differences in the emotion regulation strategies of cognitive reappraisal and expressive suppression. It consists of 10 items (6 reappraisal and 4 suppression), which are measured along a 7-point likert scale from 1 (strongly disagree) to 7 (strongly agree) (Gross & John, 2003).

1.11.5.1 Implications for Affective Responding

Studies have experimentally compared the effects of reappraisal and emotional suppression strategies on expressive behaviour, subjective experience and physiological response to different emotions (Gross & Levenson, 1995). The most commonly used experimental approaches are solitary slide- and film-viewing paradigms (Gross, 1998b; Gross & Levenson, 1993, 1997). For the emotions of disgust, sadness and amusement, suppression effectively reduced the behavioural expression of all emotions (Gross, 1998b; Gross & Levenson, 1993, 1997). There was no corresponding reduction in subjective experience of negative emotions, however suppressing amusement also corresponded to a reduction in subjective positive emotional experience (Gross, 1998b; Gross & Levenson, 1993, 1997). Gross (1998b) added a reappraisal group, and found that reappraisal appeared to be an effective emotion regulation strategy, as there was a reduction in behavioural expression and subjective experience with no hint of elevation in physiological response. On the other hand, the results for physiological responses in the suppression groups have been mixed, as studies have found evidence of a decreased heart rate (Gross & Levenson, 1993). Gross & Levenson (1997), however, reported evidence that suppression of both positive and negative emotions comes at a physiological cost of increased sympathetic nervous system activation. This physiological cost hypothesis has been supported for emotions of disgust, sadness and amusement (Gross, 1998b; Gross & Levenson, 1997). It is proposed that the mixed results could be due to the studies using different methods to measure physiological responses (Gross & Levenson, 1997).

To examine individual differences in affective responding, Gross & John (2003) examined scores on the ERQ with scores on the Positive and Negative Affect

Schedule (PANAS: Watson, Clark & Tellegen, 1988 as cited in Gross & John, 2003), self and peer reports of emotional expression and peer reports of emotion regulation. Reappraisal was related to greater experience and expression of positive emotion, and less negative emotion experience and expression (self and peer reports). Individuals who frequently use suppression are reported to experience and express less positive emotion, whilst they feel more negative emotion (Gross & John, 2003).

1.11.5.2 Implications for Cognitive and Social Functioning

Theoretically, the effort of suppressing emotional expressions may compromise the amount of cognitive resources available for use in social contexts (Gross, 1998b). The cognitive demands of suppression have been demonstrated in studies of social memory (e.g. memory for names or facts about individuals). Richards and Gross (2000) found that suppression led to memory impairment for social information, whereas reappraisal did not, supporting these predictions. Within a more ecologically valid social context, Butler, *et al.* (2003) assessed the personal and social consequences of expressive suppression, compared to a free expression and reappraisal condition for both negative and positive emotions. Compared to controls and the reappraisal group, partners of suppression regulators reported no significant difference in their experience of rapport. On the other hand, participants who were instructed to suppress their emotions were more distracted during interaction with their partner, had reduced responsiveness and their partners had the largest increases in blood pressure (Butler, *et al.*, 2003).

To examine individual differences in social functioning, Gross and John (2003) measured scores on the ERQ with scores on social sharing of emotions (Rime *et al.*, 1992 as cited in Gross & John 2003), the Attachment Avoidance Scale (Brennan *et al.*, 1998 as cited in Gross & John, 2003), Bartholomew & Horowitz's (1991 as cited

in Gross & John, 2003) questionnaire (feelings and attitudes about close relationships: avoidance and closeness-seeking), social support questionnaire (COPE; Carver *et al.*, 1989, as cited in Gross & John, 2003), a relationship closeness scale, and a peer liking scale. Reappraisal was related closely to sharing both positive and negative emotions. Reappraisal was not related to either measure of attachment avoidance or measures of social support, however had closer relationships with their peers (Gross & John, 2003). On the other hand, suppressors were less likely to share negative and positive emotions with others, and reported significantly more avoidance in close relationships (on both attachment measures). Suppressors were not disliked by peers, however they felt relatively neutral about them. On the measures of social support, suppressors had less social support across all forms of support, which was strongest for emotional support (Gross & John, 2003).

1.11.5.3 Implications for Well-being

The longer-term consequences of habitually using either reappraisal or suppression have been examined by Gross & John (2003). It was hypothesised that reappraisal would promote wellbeing given the diminished experience of negative emotions, the increase in positive emotional experiences and social outcomes associated with it. On the other hand, it was hypothesised that the long-term effects of suppression would be linked to increased levels of depressive symptoms, the avoidance and lack of close relationships would suggest less life satisfaction, lower self-esteem and less optimistic attitude towards the future. Gross & John (2003) noted that due to the many factors which can influence adjustment, the relationship between individual differences in emotion regulation and adjustment were only expected to be modest in size. The authors focussed on depressive symptoms using three different measures of depression and a satisfaction with life measure. Results showed that reappraisers

showed fewer symptoms of depression, and had a positive association with every indicator of positive functioning – were more satisfied with their lives, had higher self-esteem and were more optimistic. They also had higher levels of environmental mastery (largest effect), personal growth, self-acceptance and a clearer purpose in life (Gross & John, 2003). The results for the suppressors were consistent with the predictions and the link between interpersonal aspects of well-being were particularly strong (Gross & John, 2003). Moore, *et al.*, (2008) aimed to replicate Gross & John's (2003) work regarding individual differences in the use of suppression and reappraisal and extend it to stress-related psychopathology symptoms. Consistent with their hypotheses, expressive suppression was associated with higher self-reported stress-related symptoms, compared to reappraisal (Moore *et al.*, 2008).

1.11.5.4 Methodological Limitations

The studies outlined above indicate reappraisal to be a beneficial strategy, whereas suppression has been reported as costly, however it is important to consider the methodological limitations. Firstly, the studies were largely correlational in design, therefore direction of causality cannot be established and it is suggested that longitudinal studies would help to address the causal order of effects (John & Gross, 2004). Secondly, John & Gross (2004) recognised that the participants in these studies were primarily drawn from a student population, therefore the authors recently collected data from women in their early 60s (mean age = 61). Factor analysis of the ERQ revealed two factors; reappraisal and suppression and the internal consistency of the scales closely matched the results from the undergraduate samples (John & Gross, 2004). In order to carry out a longitudinal analysis, the participants completed the ERQ once for how they are now (Time 2), and once for how they were in their early 20s (Time 1). The use of reappraisal increased from

Time 1 to Time 2 and the use of suppression decreased. However, it was acknowledged by the authors that a substantial limitation to their studies is that memory effects may have influenced these results. A cross-sectional approach comparing undergraduates today with women in their 60's supported the previous findings. Finally, the studies have only considered two emotion-regulation strategies and have examined them primarily in relation to general positive or negative emotions, rather than in the context of specific emotions (John & Gross, 2004).

To summarise this section, Gross (1998a) has proposed a process model of emotion regulation. Within this process, cognitive reappraisal is hypothesised to occur early on in the process and involves reappraising a potentially emotion-eliciting situation in such a way as to change the trajectory of the emotion. Expressive suppression on the other hand, occurs late on in the process and involves suppressing the expression of emotions once the emotion has been elicited. Experimental studies and individual difference studies have found that reappraisal did not alter the subjective experience of positive emotions and reduced the subjective experience of negative emotions, whereas suppression down regulated positive emotion and did not alter the subjective experience of negative emotions. In addition, studies have reported that the frequent use of reappraisal and suppression may have different consequences for psychological well-being. Reappraisal is characterised by fewer symptoms of depression, more satisfaction with life, higher self-esteem, more optimism, higher levels of environmental mastery, personal growth, self-acceptance and a clearer purpose in life, whereas suppression is characterised by higher self-reported stress-related symptoms and poor interpersonal functioning (Gross & John, 2003). The authors do not make any assumptions about whether the use of reappraisal or suppression is good or bad (and indeed, there will be circumstances in which suppression will be necessary and when reappraisal will be costly) however, the

studies support beneficial outcomes for reappraisal and costly outcomes for suppression (John & Gross, 2004)

1.12 Developing an overarching framework

As previously discussed, there is growing interest in the development of an overarching framework from which to understand staff emotional and behavioural responses to challenging behaviour (e.g. Hastings, 2005; Rose & Rose, 2005). Firstly, emotions have been proposed to play a central role in mediating the relationship between attributions and helping behaviour. Given the affective consequences of reappraisal and suppression outlined in the experimental studies, these strategies may provide a process by which the emotions generated by attributions will be strengthened or weakened. Also of interest is the literature on staff stress and psychological well-being. Although research has not established a clear link from staff responses to challenging behaviour, given the implications that reappraisal and suppression have for stress related symptoms, it would be expected that reappraisal may have a positive relationship with helping behaviour and suppression a negative relationship.

1.13 Overall Summary

There is a considerable body of research which has examined individual factors which may help to understand staff behavioural responses to challenging behaviour. These include limited knowledge, causal attributions, and staff stress responses:

- Studies have found staff training to be an effective method of enhancing levels of knowledge in positive behavioural support approaches. The clinical significance of providing such training will be enhanced if knowledge is positively related to actual staff practice.

- Weiner's (1980, 1986) model of helping behaviour applied within a learning disability context is a useful model to understand staff behavioural responses to challenging behaviour. Research has not consistently found a significant relationship between attributions and actual helping behaviour. There is a need to provide a valid definition of actual helping behaviour.
- Studies have reported a link between staff stress and general interaction behaviour. Although research has focussed on factors external to the staff to help explain the variation in support for Weiner's (1980, 1986) model, limited research has focussed on staff individual differences, such as emotion regulation style.

Cognitive reappraisal and expressive suppression have been reported to have different consequences for affective responding, cognitive and social functioning, and implications for well-being. These individual differences have important implications for integrating the attribution and stress literature in further enhancing understanding of staff responses to challenging behaviour.

1.14 Aims

The primary aim of this study is to provide further understanding of staff behavioural responses to challenging behaviour. Firstly, the study will investigate whether there is a significant relationship between knowledge and staff behavioural response to challenging behaviour. Secondly, the study will investigate whether the relationship between attributions of challenging behaviour and behavioural response are supported. Thirdly, attributions will be examined in predicting helping behaviour, when knowledge is controlled for. Finally, the relationship between attributions and emotion regulation styles will be explored, and whether emotion regulation strategies

moderate the relationship between attributions of challenging behaviour and behavioural response to challenging behaviour.

1.15 Hypotheses

The specific hypotheses of this thesis are:

Hypothesis 1: *there will be a significant positive relationship between knowledge of challenging behaviour and behavioural response to challenging behaviour.*

Hypothesis 2: *there will be a significant relationship between attributions and behavioural response to challenging behaviour, i.e. there will be a significant positive relationship between helpful attributions and behavioural response, and a significant negative relationship between unhelpful attributions and behavioural response.*

Hypothesis 3: *there will be a significant relationship between individual differences in emotion regulation styles and attributions, i.e. a significant positive relationship between reappraisal and helpful attributions, and a significant positive relationship between unhelpful attributions and suppression, a significant negative relationship between reappraisal and unhelpful attributions, and a significant negative relationship between suppression and helpful attributions.*

Hypothesis 4: *knowledge of challenging behaviour and helpful attributions will be significant predictors of behavioural response to challenging behaviour.*

Hypothesis 5: *individual differences in emotion regulation style will moderate and mediate the relationship between attributions and behavioural response to*

challenging behaviour, i.e. for moderation, reappraisal will strengthen both helpful and unhelpful attributions and suppression will weaken the relationships. For mediation, reappraisal and suppression will account for the relationship between attributions and behavioural response – attributions will predict a helpful behavioural response through reappraisal, attributions will predict an unhelpful behavioural response through suppression.

Chapter 2 - Method

2.1 Design

This study employed a questionnaire based design using a mixed methodology of qualitative and quantitative measures. Participants were required to complete all questionnaires on a single occasion.

2.2 Ethical Issues and Approval

Ethical approval for this study was obtained from the relevant NHS Research & Development Department and from the University of Edinburgh Ethics Committee. All relevant documentation and permission can be found in Appendix VII and Appendix VIII. Although the study did not need to be submitted to NHS ethics, a number of potential ethical issues were considered.

The potential emotional impact on the participants of completing the questionnaires was one of the most significant ethical implications to be considered. Both reflecting on the challenging behaviour of those they support and their emotion regulation style may have triggered difficult and emotional memories for participants. In order to address these issues, it was noted in the participant information sheet (Appendix VIII) that participants could withdraw from the study at any time and it was recommended that they contact their supervisor/line manager if they became distressed during completion of the questionnaires.

It was also considered that the topic under study may have prompted participants to contact the principal researcher to discuss the clinical management of individual cases. The principal researcher would therefore redirect them to the appropriate psychologist within their geographical area to discuss the case further.

Anonymity of the participants and service users was also considered. No identifiable participant or service user information was required and consent forms were detached from the questionnaires when returned to the researcher. It was also anticipated that participant responses may uncover some inappropriate working practices; however, the anonymity of the participants would not provide the researcher opportunity to directly address any concerns. It was, however possible to provide more general feedback to the Social Work Managers to inform the local authority that such practices had been identified and would not be recommended as best practise.

2.3 Power and sample size calculation

In order to calculate the power and sample size, it was necessary to first determine the effect size required for this type of research. On review of relevant literature, no previous research was found that directly addressed the current research question. Cohen (1992) reported that most psychological research produces medium effect sizes. According to Cohen (1992), to achieve a power of 0.80, $\alpha = .05$, for correlation analysis, a sample size of 85 will detect a medium effect size. According to Green, (1991) to achieve a power of 0.80, $\alpha=.05$ for multiple regression, $N \geq 50 + 8m$ (where m is the number of IVs). Therefore, with three predictors, the sample size required will be $50 + (8)(3) = 77$ which will produce a medium effect size with adequate power. As the current study recruited a sample size of 107, it would be possible to detect medium effect sizes with adequate power.

2.4 Participants

Fifty-six support staff completed the postal questionnaire (8% return rate) and fifty-one support staff completed the online questionnaire, which gives a total of one-hundred and seven participants. Considerably more females (N=89) than males (N=18) completed the questionnaire and the mean age was 42 years (SD 10.9). The current sample had a mean of 12.8 years (SD 97.7) of experience in learning disability services (LD) and 11.4 years (SD 98.1) of experience working with challenging behaviour (CB). These characteristics are consistent with previous research (e.g. Wanless & Jahoda, 2002). There is no demographic data available for those that did not complete the postal questionnaires, however there is demographic data available for those who started the online questionnaire but did not complete it. Those that did not complete the online questionnaires were matched on age to the overall sample, however there were a larger percentage of males and more experience in those that did not complete the online questionnaires. A summary of the sample characteristics are presented in Table 2.1.

Table 2.1
Summary of sample characteristics

Demographic Variables	Descriptives	
	Completed (total sample)	Uncompleted (online only)
Age	42 years (SD 10.9)	42 years (SD 8.6)
Gender	Female: 89 (83.2%)	Female: 15 (57.7%)
	Male: 18 (16.8%)	Male: 11 (42.3%)
Experience LD	12.8 years (SD 8.1)	18 years (SD 7.5)
Experience CB	11.4 years (SD 8.2)	17 years (SD 7.9)

2.5 Inclusion and Exclusion Criteria

The sample was restricted to paid care staff who currently worked with an adult with a learning disability who displayed challenging behaviour. Care staff who were unable to read or write in English were excluded from the study.

2.6 Recruitment

Participants were recruited initially from three different local authority regions within one large geographical area in Scotland, however as this did not yield a high return rate, an online questionnaire was sent UK wide. The recruitment process for each of these processes will now be discussed.

2.6.1 Postal

Firstly, telephone contact was made with each of the Social Work Heads of Service (Learning Disability Services) to arrange a meeting. This meeting was used to obtain consent for recruiting participants within their local authority area, and provide clarification of the term challenging behaviour, as used in the present study.

The definition used was:

‘Behaviour can be described as challenging when it is of such an intensity, frequency or duration as to threaten the quality of life and/or the physical safety of the individual or others and is likely to lead to responses that are restrictive, aversive or result in exclusion’ (RCP, BPS, & RCSLT, 2007, p.10)

Based on the inclusion criteria and the above definition of challenging behaviour, the Heads of Service identified appropriate care organisation projects within their area which would be suitable for this study.

2.6.2 Online

The questionnaire was put online via Survey Monkey (www.surveymonkey.com). Permission was granted to post the questionnaire to members of the Choice Forum run by the Foundation for Learning Disability (www.learningdisabilities.org.uk) and to members of the Challenging Behaviour Foundation (www.thecbf.org.uk). Members of these forums include paid, unpaid and voluntary carers, family members and professionals. The principal researcher also searched the internet for relevant Care Provider Organisations across the United Kingdom who provide support to adults with a learning disability who display challenging behaviour.

2.7 Procedure

2.7.1 Postal

Once participants had been identified, the principal researcher made contact with the managers via e-mail or telephone to request the number of potential participants at the project and a postal address. A letter (signed by the principal researcher, clinical supervisor for the study, and Head of Service for Social Work, learning disability services; see Appendix IX) was posted off along with questionnaire packs for the managers to distribute to the care staff. The questionnaire packs contained a participant information sheet (see Appendix VIII), consent form (see Appendix X) and outcome measures. Questionnaires were copied onto coloured paper to make it distinguishable, and individual hand-written notes were attached to each participant information form, thanking each member of staff for taking the time to read the information. The participant information sheet outlined the rationale for the study, and provided information about how to participate, while highlighting that participation was completely voluntary. If participants consented, they were requested to complete the consent form and questionnaires and return in the stamped address envelope provided.

2.7.2 Online

The link to the questionnaire were posted on the forums and sent via e-mail to invite relevant care organisations to take part. The managers were then requested to forward the link on to their staff teams. All of the relevant information (participant information sheet, consent form, and questionnaires) was posted online via the questionnaire link (www.surveymonkey.com). If the participants consented they were requested to complete the relevant consent form online and then complete the questionnaires. The results were recorded online, which was password protected, only accessible by the principal researcher.

2.8 Outcome Measures

2.8.1 Demographic Information

Carers were requested to complete demographic information pertaining to their age, sex, and length of experience working with adults with a learning disability and adults with a learning disability who display challenging behaviour.

2.8.2 Knowledge of the term and management of challenging behaviour

Staff knowledge of the term and of management of challenging behaviour was measured by two questions (McKenzie *et al.*, 1998; Rae, 2007).

- 1) What is your understanding of the term ‘challenging behaviour’?
- 2) What do you think the most important factors are in managing challenging behaviour?

Responses to the first were coded in terms of whether mention was made of the following factors:

- a) topography, e.g., aggression, self-injury, stereotypy
- b) safety – of the client or other individuals
- c) limited access to community resources
- d) behaviour that the community or worker found it difficult to work with

Each response was assigned an overall score, ranging from 0 to 4, depending on how many of the above categories were included in their answer.

Responses to the second were coded in terms of whether mention was made of the following:

- a) Reactive responses, e.g. issues relating to safety and protection, a need to be calm.
- b) Psychological approach and principles, e.g. function of the behaviour, consistent approach, reinforcement, triggers.
- c) Positive Programming – implementation of long term skills as an alternative to problem behaviour.
- d) Ecological changes – changing the persons setting, changing the number and quality of interactions, changing the instructional method used, changing instructional goals, removing or controlling temperature or noise in environment.

Responses were assigned an overall score, ranging from 0 to 4, one point was awarded for each category included. Category d) was not included in McKenzie *et al.*'s (1998) study, however professional practice guidelines have identified

ecological changes as an important element to proactive approaches in the management of challenging behaviour (Ball et al., 2004; RCP, BPS & RCSLT, 2007). The total scores for knowledge of the term and of management of challenging behaviour were combined to produce an overall score of knowledge of challenging behaviour, ranging from 0 to 8.

2.8.2.1 Reliability

Previous research found good inter-rater reliability with κ values of 0.91 or above, $P < 0.01$ (McKenzie *et al.*, 1998) and κ values of 0.78 or above, $p < 0.01$ (Rae, 2007) for knowledge of the term challenging behaviour. Inter-rater reliability has also been established for knowledge of management of challenging behaviour with κ values of 0.86 or above ($p < 0.01$; McKenzie *et al.*, 1998) and with κ values of 0.78 or above ($p < .01$; Rae, 2007).

2.8.2.2 Validity

Previous research found that this measure discriminated between experienced and inexperienced health and social care workers in learning disability services (McKenzie *et al.*, 1998). The measure of knowledge of management also has good levels of face validity as it is based on best practice guidelines (Ball et al., 2004; RCP, BPS & RCSLT, 2007)

As the research by McKenzie *et al.* (1998) included a range of different professionals with varying degrees of qualification, including both direct care staff and health professionals, a pilot study was carried out for the present research to establish the reliability of the measures in a sample of only local authority/independent organisation direct care staff.

2.8.2.3 Results of Pilot Study

- **Knowledge of the term**

Eleven responses were rated by a second person, who was independent of the current study. An inter-rater reliability analysis using the Kappa statistic with linear weighting was performed to determine consistency among raters. Inter-rater reliability for the overall scores (range = 0-4), had a κ value of 0.89 $p < .01$. According to Landis & Koch (1977) this value is considered ‘outstanding’. Table 2.2 gives examples of responses and scoring in relation to the question “what is your understanding of the term ‘challenging behaviour’?”

Table 2.2

Examples of responses - knowledge of the term challenging behaviour

Category	Response
Topography	Hits, bites, scratches, throw objects
Safety	Risk of harm to self and others
Difficult to manage	Especially when in public, difficult to manage around people that don't know her
Limited Access	Can't be taken out

- **Knowledge of Management of challenging behaviour**

Eleven responses were rated by a second person, who was independent of the current study. An inter-rater reliability analysis using the Kappa statistic with linear weighting was performed to determine consistency among raters. Inter-rater reliability for the overall scores (range = 0-4), had a κ value of 0.67, $p < .01$. According to Landis & Koch (1977) this value is considered ‘substantial’. Table 2.3 gives examples of responses and scoring in relation to the question “what do you think the most important factors are in managing challenging behaviour”?

Table 2.3*Examples of responses - knowledge of management of challenging behaviour*

Category	
Reactive	Make sure that the person and others are safe
Functional/Psychological	Try to find out possible reasons for the behaviour
Proactive – positive programming	Try to teach the person how to respond differently
Proactive – ecological changes	Reduce any possible triggers in the environment

2.8.3 Causal attributions of challenging behaviour

Participants were asked the question “what do you think some of the main reasons are for an adult with a learning disability displaying challenging behaviour”. Participants written responses were coded according an amended version (see Brewin *et al.* 1991) of the Leeds Attributional Coding System (LACS; Stratten *et al.*, 1986; Munton *et al.* 1999) allowing for qualitative information to be quantified.

2.8.3.1 LACS dimensions

The LACS is a binary coding system which assigns a score of 0 or 1 to the opposite poles of each attributional dimension. The LACS allows for coding of five bipolar attributions, internal-external, stable-unstable, personal-universal, controllable-uncontrollable and global-specific (Stratten *et al.*, 1986). The dimensions of interest to the current study which map directly to Wiener’s (1980, 1986) model are locus, stability and controllability:

1. Whether the origin of the cause of the challenging behaviour was with the client or not (locus: internal-external);
2. Whether there is something unique implied in the cause (locus: personal-universal);
3. Whether the cause was permanent (stability: stable-unstable);
4. Whether the client was in control of their behaviour and intended to do what they did (controllability: controllable-uncontrollable).

2.8.3.2 Reliability

Previous research has found this coding method to have good levels of inter-rater reliability using percentage agreement index (PAI), ranging from 82-95% (Noone *et al.*, 2006) and the Kappa coefficient with κ values of .82 for internal-external, .66 for personal-universal, .58 for controllable-uncontrollable and .74 for stable-unstable ($p < .01$; Snow *et al.*, 2007).

2.8.3.3 Coding of Attributions

In order to gather data which would reflect the combination of helpful and the combination of unhelpful attributions, a new coding method was developed. Each participant was awarded one point for the presence of each helpful attribution, and one point for the presence each unhelpful attribution. Table 2.4 illustrates the scoring system for these variables providing a range of 0 to 4 for both.

Table 2.4*Examples of scoring for helpful and unhelpful attributions*

Helpful Attributions	Score	Unhelpful attributions	Score
External	1	Internal	1
Universal	1	Personal	1
Unstable	1	Stable	1
Uncontrollable	1	Controllable	1

Appendix XI shows examples of responses received and the corresponding attributional code and score awarded. A pilot study was carried out to establish the reliability for this measure.

2.8.3.4 Results of Pilot Study

Eleven responses were rated by a second person, who was independent of the current study. An inter-rater reliability analysis using the Kappa statistic was performed to determine consistency among raters. Inter-rater reliability for the overall scores (range = 0-4), had a linear weighted κ value of 0.62, $p < .01$ for the helpful and unhelpful attributions. According to Landis & Koch (1977) these values are considered ‘substantial’.

2.8.4 Staff behavioural responses to challenging behaviour

Hastings’ (1996) method was adapted for use in the present study, however the use of vignettes was replaced with reported response to challenging behaviour which enhanced the ecological validity of the measure. This also provided a direct measure of helping behaviour in a learning disability context. Participants were asked the following questions:

- a) Thinking of your most recent experience, how did you respond to the challenging behaviour of X?
- b) Why did you respond in this way?
- c) What changes, if any, did you make to your future management of X's challenging behaviour.

2.8.4.1 Scoring Responses

The scoring criteria for behavioural responses to challenging behaviour adopted the same scoring criteria used to measure staffs' knowledge of management of challenging behaviours (McKenzie *et al*, 1998). The rationale for this is that knowledge of management should reflect how staff then respond to challenging behaviour. As this scoring criteria had not previously been applied to staffs' actual behavioural responses to challenging behaviour, it was necessary to pilot the measure to establish inter-rater reliability and face validity.

2.8.4.2 Results of Pilot

Reliability

Eleven responses were rated by a second person, who was independent of the current study. An inter-rater reliability analysis using the Kappa statistic with linear weighting was performed to determine consistency among raters. Inter-rater reliability for the overall scores (range = 0-4), had a κ value of 0.73, $p < .01$. According to Landis & Koch (1977) this value is considered 'substantial'.

Validity

The pilot study highlighted that question b) did not gather data reflecting a behavioural response to challenging behaviour, therefore it was removed from the main study. This measure of staff behavioural response to challenging behaviour has

high face validity as the scoring system is derived from ‘best practice’ research. This includes reactive responses, the application of psychological principles, and the development and application of proactive strategies which may include positive programming and/or ecological changes (BPS, 2004; RCP, BPS & RCSLT, 2007).

Table 2.5 provides examples of responses to the questions “thinking of your most recent experience, how did you respond to the challenging behaviour of X?” and ‘What if any changes did you make to your future management of challenging behaviour?’

Table 2.5

Examples of responses - behavioural response to challenging behaviour.

Category	Reason
Reactive	Removed other service users out of room to give person space, stayed close, left until calm
Behavioural/Psychological	Realised I hadn’t used the communication system, he didn’t know what was happening next.
Proactive – positive programming	On return from the day centre, the first activity will be relaxation in quiet room.
Proactive – ecological changes	Use a visual communication system to communicate what is happening

2.8.5 Emotion Regulation Questionnaire (ERQ; Gross & John, 2003)

The Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) was used to measure emotion regulation style. It was developed to examine whether individuals differ in their use of particular emotion regulation strategies (Gross & John, 2003). The ERQ assesses individual differences between the emotion regulation strategies of cognitive reappraisal and expressive suppression, defined by the items “I control my emotions by changing the way I think about the situation”, and “I control my

emotions by not expressing them”, respectively (Gross & John, 2003). The ERQ (Gross & John, 2003, see Appendix XII for a copy) consists of 10 items (6 reappraisal and 4 suppression), which are measured along a 7-point likert scale from 1 (strongly disagree) to 7 (strongly agree).

2.8.5.1 Factor structure and Scale Inter-correlations

Gross & John (2003) tested the factor structure of the ERQ on various different samples. Initial analysis indicated that the two factors of reappraisal and suppression were independent in each sample (mean $r = -.01$). To confirm these findings, confirmatory factor analysis showed that the independence model provided the best fit ($\chi^2(1, N = 1,483) = 0.3$, ns (Gross & John, 2003).

2.8.5.2 Reliability

The ERQ is has good levels of reliability, which averaged .79 for Reappraisal and .73 for Suppression. Test-retest reliability across three months was .69 for both scales (Gross & John, 2003).

2.8.5.3 Construct Validity

A nomological net was established by assessing convergent and discriminant relations with conceptually relevant constructs. Gross & John (2003) reported that the findings indicate that reappraisal and suppression should have rather different affective consequences (Gross & John, 2003).

2.9 Statistical Analyses

Correlations were computed to analyse the degree of relationship between variables. Regression analysis was computed to investigate the significance of variables in predicting behavioural response to challenging behaviour, moderated multiple

regression was computed to examine whether emotion regulation styles moderated the relationship between attributions and behavioural response to challenging behaviour and multiple mediation analysis was computed through the bootstrapping procedure to examine whether emotion regulation styles mediated the relationship between attributions and behavioural response to challenging behaviour. The results were analysed using SPSS Version 16.0

Chapter 3 - Results Section

The results section will describe how the data were explored and prepared for analyses before the results for each hypothesis is presented.

3.1 Exploring the Data

3.1.1 Missing Data

There were two cases which had incomplete scores for the Reappraisal and Suppression scales. The individual mean across items was calculated, and applied to these scores (Field, 2009; Tabachnick & Fidell, 2001).

3.1.2 Tests of normality

The raw data were initially checked for normality of distribution, one of the assumptions of parametric tests. Appendix XIII contains details of the tests completed and the results of this analysis. The Kolmogorov-Smirnov (K-S) statistic was used as a general estimate of non-normality, and revealed that knowledge, $D(107) = 0.23$, $p < .001$, helpful attributions, $D(107) = 0.39$, $p < .001$, unhelpful attributions, $D(107) = 0.21$, $p < .001$, and behavioural response, $D(107) = 0.30$, $p < .001$, were significantly non-normal. The skewness and kurtosis statistic were used to examine more specifically how the data were distributed. The skewness and kurtosis were converted to z-scores to compare against values that would be expected by chance. There were three variables which had significantly skewed distributions ($Z > 2.58$), namely helpful attributions, reappraisal and behavioural response. Boxplots were examined for outliers. Following examination of these cases, they did not appear to be unrepresentative of the population sampled, therefore there was no reason to remove the outliers. Both the K-S statistic and the skewness values

provided evidence for transforming the data for these variables to minimise the potential of non-normality on the statistical analyses. Table 3.1 provides the direction of the skew for these variables, the transformations applied and the resulting Z score.

Table 3.1

Data Transformations for skewed variables: helpful attributions, cognitive reappraisal and behavioural response

Variable	Skew	Transformation	Z Score	K-S
Helpful Attributions	Negative	Reciprocal (K-X)	-3.20	p < .001
Reappraisal	Negative	Square Root (K-X)	-1.29	p < .001
Behavioural Response	Positive	Log10	-0.06	p < .001

The transformations applied to the reappraisal and behavioural response variables have been successful in reducing the skewness and the helpful attribution variable was reduced to non-significant levels ($Z < 3.29$).

3.1.3 Multicollinearity

Pearson product-moment correlation coefficients were conducted to examine the degree of relationship between the independent variables. Table 3.2 contains the results of the correlations.

Table 3.2*Results of Correlations Between Independent Variables*

Variables	Knowl	Helpf Attrib	Unhelpf Attrib	Reapp	Supp
Knowl					
Helpf Attrib	.260**				
Unhelpf Attrib	.023	-.111			
Reapp	-.095	-.075	-.076		
Supp	-.062	.027	.030	-.031	

**Significant at the 0.01 level (1-tailed)

*Significant at the 0.05 level (1-tailed)

The results show that the variable helpful attributions is correlated with knowledge ($r = .260$, $p < .01$). Calculation of the coefficient squared shows the association to have a small effect size ($r^2 = .01$), which indicates that these two variables are relatively unrelated.

3.1.4 Significance of Gender

Section 2.4 shows that a large majority of the sample in this study were female (83.2%). An independent samples t-test was conducted to examine the influence of gender (male and female) on each of the variables (helpful attributions, unhelpful attributions, knowledge, cognitive reappraisal, expressive suppression, and behavioural response). No significant results were obtained from this analysis.

3.2 Descriptive Statistics

Table 3.3 contains the minimum, maximum, and mean (standard deviation) scores for each of the measures. A low mean score on the knowledge measure indicates that participants had limited knowledge about challenging behaviour. The mean scores for the helpful and unhelpful attribution measures suggest that participants made both helpful than unhelpful attributions about the causes of challenging behaviour. The mean score on the behavioural response measure indicates that participants have reported partially helpful responses towards challenging behaviour. The mean scores on the reappraisal and suppression subscales indicated that participants reported that they both reappraise and suppress their emotional response tendencies.

Table 3.3
Minimum, Maximum, and Mean (Standard Deviations) scores of each measure

Variables	Min	Max	Mean (SD)
Knowledge	.00	6.00	2.63 (1.18)
Helpful	.20	1.00	.77 (.32)
Unhelpful	.00	4.00	2.15 (1.02)
Behavioural Response	.00	.70	.40 (.14)
Reappraisal	1.00	6.08	3.30 (1.07)
Suppression	4.00	26.00	13.85 (4.42)

3.3 Testing Hypotheses

Hypothesis 1: *there will be a significant positive relationship between knowledge of challenging behaviour and behavioural response to challenging behaviour.*

The relationship between knowledge of challenging behaviour and behavioural response to challenging behaviour was examined using a Pearson product-moment correlation coefficient. There was a significant positive correlation between knowledge of challenging behaviour and behavioural response to challenging behaviour ($r = .357$, $p < .001$). This result suggests that, if staff have higher knowledge of the term and management of challenging behaviour they are more likely to respond to challenging behaviour in a “helpful” way. Calculation of the coefficient squared shows the association to have a small effect size ($r^2 = 0.1$).

Hypothesis 2: *there will be a significant relationship between attributions and behavioural response to challenging behaviour, i.e. there will be a significant positive relationship between helpful attributions and behavioural response, and a significant negative relationship between unhelpful attributions and behavioural response.*

The relationship between attributions and behavioural response to challenging behaviour was examined using a Pearson product-moment correlation coefficient. There was a significant positive relationship between helpful attributions and behavioural response to challenging behaviour ($r = 0.16$, $p < .05$), however, there

was no significant relationship between unhelpful attributions and behavioural response to challenging behaviour ($r = -0.11$, ns). This result suggests that staff who make attributions about challenging behaviour which are external, uncontrollable, unstable, and universal to the person with a learning disability, are more likely to respond in a “helpful” way to challenging behaviour.

Hypothesis 3: *there will be a significant relationship between individual differences in emotion regulation styles and attributions, i.e. a significant positive relationship between reappraisal and helpful attributions, and a significant positive relationship between unhelpful attributions and suppression, a significant negative relationship between reappraisal and unhelpful attributions, and a significant negative relationship between suppression and helpful attributions.*

The relationship between individual differences in emotion regulation styles and attributions were examined using a Pearson product-moment correlation coefficient. There were no significant relationships found between reappraisal and helpful attributions ($r = -0.08$, ns), between reappraisal and unhelpful attributions ($r = -0.08$, ns), between suppression and helpful attributions ($r = 0.27$, ns), or between suppression and unhelpful attributions ($r = 0.03$, ns).

- Normality, independence, multicollinearity, homoscedasticity, and linearity

There are a number of assumptions that must be met before a regression equation carried out on a sample can be generalised to the population (Berry, 1993). These include normally distributed and independent residuals, no perfect multicollinearity,

homoscedasticity, and linearity. A histogram and P-P plot of standardised residuals were examined for normality. Further statistical examination of the distribution showed that all models did not have significant skewness or kurtosis values. Using Cook's Distance, Mahalanobis Distance, and Leverage Values, the outliers did not have a significant impact on the models. Examination of the skewness and kurtosis statistic indicated that the residuals were not significantly skewed. The Durbin-Watson statistic for this model indicates that the residuals are independent. In order to reduce any multicollinearity with the model the variables helpful, unhelpful, reappraisal, and suppression were all centred by subtracting the sample mean from each individuals' scores for each variable (Aiken & West, 1991). Finally, standardised residuals are plotted against the standardised predicted values, giving an indication of whether there is homoscedasticity and linearity within the data. These showed that there were no extreme deviations from homoscedasticity and linearity.

Hypothesis 4: *knowledge of challenging behaviour and helpful attributions will be significant predictors of behavioural response to challenging behaviour.*

Multiple regression was used to test whether knowledge and attributions were significant predictors of behavioural response to challenging behaviour. Using the forced entry method, the predictor variables, knowledge and helpful attributions were regressed onto the outcome variable, behavioural response. The results of the regression analysis is shown in Table 3.4.

Table 3.4

Results of the Multiple Regression Analysis (Unstandardised regression coefficients (B), the standardised regression coefficients (β), R^2 , adjusted R^2 , R^2 change, and F change).

Predictors change	B	β	R^2	Adjusted R^2	R^2 change	F
Knowledge	0.041	0.339*				
Helpful	0.033	0.072	0.133	0.116		7.946*

*Significant at the .01 level.

The results in Table 3.4 show that overall this model was significant ($F_{(2, 104)} = 7.946, p < .01$) and it accounted for 13% of the variance ($R^2 = .133$). Knowledge made a significant contribution to the regression equation ($\beta = 0.34, t = 3.58, p < .01$), however the contribution of helpful attributions was not significant. The unstandardised coefficient B indicated that as knowledge increases by one unit (representing more knowledge of challenging behaviour) then behavioural response to challenging behaviour will increase by 0.04 (representing a more helpful response). The part correlation coefficient for knowledge was 0.327 and when squared indicates that knowledge uniquely explains 11.5% of the total variance of behavioural response.

Hypothesis 5: *individual differences in emotion regulation style will moderate and mediate the relationship between attributions and behavioural response to challenging behaviour, i.e. for moderation, reappraisal will strengthen both helpful and unhelpful attributions and suppression will weaken the relationships. For mediation, reappraisal and suppression will account for the relationship between attributions and behavioural response – attributions will predict a helpful behavioural response through reappraisal, attributions will predict an unhelpful behavioural response through suppression.*

The moderator relationships were examined via multiple regression (Baron & Kenny, 1986; Holmbeck, 1997). The initial step involves regressing the predictor variable (attributions) and the moderator variable (emotion regulation style), upon the outcome variable, behavioural response. Following this, the predictor and the moderator variables are combined (attributions multiplied by emotion regulation style), which is called the interaction term. If the interaction term significantly contributes to the variance of the target variable, once the previous variables have been controlled for, this is evidence that emotion regulation style moderates the relationship between attributions and behavioural response to challenging behaviour. As the interaction term is the product of both predictor variables, it is expected that there will be multicollinearity within the model. It is recommended, therefore, that the variables are centred (put in deviation form) prior to conducting the regression analysis (Aiken & West, 1991).

Moderator multiple regression was carried out four times to examine the moderating effect of both emotion regulation styles on both of the attribution variables in predicting behavioural response. Table 3.5 provides the results of the analyses.

Reappraisal x Helpful

Model 1.1 was found to be significant ($F_{(2, 104)} = 3.091, p < 0.05$) accounting for 5.6% of the variance. However, neither helpful ($\beta = 0.147, ns$) nor reappraisal ($\beta = -0.175, ns$) significantly contributed to the regression equation. The interaction term ($\beta = -0.377, ns$) and Model 1.2 ($F_{(1, 103)} = 0.924, ns$) were not significant, accounting for 6.4% of the variance. These results suggest that reappraisal does not significantly strengthen the relationship between helpful attributions and behavioural response to challenging behaviour.

Suppression x Helpful

Model 2.1 was not significant ($F_{(2, 104)} = 1.967, ns$) as neither helpful attributions ($\beta = 0.163, t = 1.691, ns$) nor suppression ($\beta = -0.104, t = -1.083, ns$) significantly contributed to the regression equation. The interaction term did not significantly contribute to the equation ($\beta = -0.106, t = -0.260, ns$) and Model 2.2 was not significant ($F_{(1, 103)} = 0.068$). This result suggests that suppression does not moderate the relationship between helpful attributions and behavioural response to challenging behaviour.

Reappraisal x Unhelpful

Model 3.1 was not found to be significant ($F_{(2, 104)} = 2.721, ns$) accounting for 5% of the variance. Reappraisal ($\beta = -0.195, t = -2.039, p < 0.05$) significantly contributed to the equation, however unhelpful attributions ($\beta = -0.123, t = -1.285, ns$) did not. The unstandardised coefficient B indicates that as reappraisal increases by one unit

(indicating more use of reappraisal strategies) there will be a decrease of 0.026 units in behavioural response to challenging behaviour (indicating less help giving). The interaction term did not significantly contribute ($\beta = 0.107$, $t = 0.345$, ns) to the equation and Model 3.2 was not significant ($F_{(1, 103)} = 0.119$, ns) accounting for 5.1% of the variance ($R^2 = 0.051$). This result suggests that reappraisal does not moderate the relationship between unhelpful attributions and behavioural response to challenging behaviour and the significant negative contribution of reappraisal is in the opposite direction from what was expected.

Suppression x Unhelpful

Model 4.1 was not significant ($F_{(2, 104)} = 1.119$, ns) as neither suppression ($\beta = -.097$, $t = -0.996$, ns), nor unhelpful attributions ($\beta = -0.105$, $t = -1.086$, ns) significantly contributed to the regression equation, accounting for 2.1% of the variance. The interaction term ($\beta = 0.122$, $t = 0.331$, ns) therefore did not significantly contribute to the equation, and Model 4.2 was not significant ($F_{(1, 103)} = 0.110$, ns) accounting for 2.2% of the variance. This result suggests that reappraisal does not moderate the relationship between unhelpful attributions and behavioural response to challenging behaviour.

Table 3.5

Results of Moderator Multiple Regression (Unstandardised regression coefficients (B), the standardised regression coefficients (β), R^2 , adjusted R^2 , R^2 change, and F change).

Predictors	B	β	R^2	Adjusted R^2	R^2 change	F change
Model 1.1						
Reappraisal	-0.024	-0.175				
Helpful	0.067	0.147	0.056	0.038		3.091*
Model 1.2						
Helpful x Reapp			0.064	0.037	0.008	0.924
Model 2.1						
Suppression	-0.003	-0.104				
Helpful	0.074	0.163	0.036	0.018		1.967
Model 2.2						
Helpful x Supp	-0.003	-0.106	0.037	0.009	0.001	0.068
Model 3.1						
Reappraisal	-0.026	-0.195*				
Unhelpful	-0.017	-0.123	0.050	0.031		2.721
Model 3.2						
Unhelpful x Reapp	0.004	0.107	0.051	0.023	0.001	0.119
Model 4.1						
Suppression	-0.003	-0.097				
Unhelpful	-0.015	-0.105	0.021	0.002		1.119
Model 4.2						
Unhelpful x Supp	0.001	0.122	0.022	-0.006	0.001	0.110

* Significant at the 0.05 level

Multiple mediation analysis (more than one mediator entered at once) was conducted using the bootstrapping procedure (Preacher & Hayes, 2008). This approach quantifies the specific indirect effects from the standard error of the product terms a^1b^1 and a^2b^2 (see Figure 7). The bootstrapping procedure is a resampling procedure in which samples are drawn from the original data set with replacement. Calculations are then computed and stored. This procedure is repeated multiple times. Once complete, the stored results are averaged, standard errors are calculated and confidence intervals are computed (Preacher & Hayes, 2008). The standard error is used for testing the null hypothesis that the true indirect effect is zero. If the lower and upper confidence intervals do not contain zero, then it can be claimed that the indirect effect is not zero with 95% confidence (Hayes, 2009).

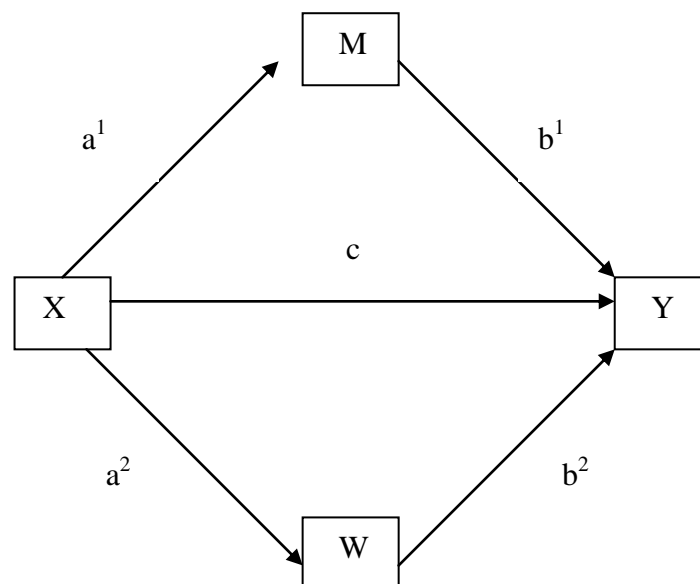


Figure 7: Illustration of mediatoion effect of attributions (X) on behavioural response (Y) through reappraisal (M) or suppression (W).

A script for bootstrapping was run in SPSS version 16 (www.afhayes.com/spss-sas-and-mplus-macros-and-code.html). Multiple mediation analysis was carried out twice to examine the indirect effect of emotion regulation styles on both helpful and unhelpful attributions in predicting behavioural response. The bootstrap estimates

are based on 5,000 bootstrap samples with 95% confidence intervals (Hayes, 2009). Table 3.6 provides the results of the analysis.

Table 3.6: Results of Mediation Analysis: Point Estimate, Standard Error (SE), Z-score, and 95% confidence intervals

	Point Estimate	Product of Coefficients		Bootstrapping BCa 95% CI	
		SE	Z	Lower	Upper
Helpful					
Reappraisal	.0061	.0085	.7131	-.0073	.0332
Suppression	-.0014	.0050	-.2717	-.0227	.0076
TOTAL	.0047	.0098	.4840	-.0164	.0309
Unhelpful					
Reappraisal	.0021	.0029	.7362	-.0035	.0117
Suppression	-.0004	.0015	-.2991	-.0080	.0023
TOTAL	.0017	.0032	.5291	-.0060	.0109

Note – BCa, bias corrected and accelerated; 5000 bootstrap samples

Examination of the total indirect effect shows that neither helpful (.0047, 95% BCa bootstrap CI of -.0164 to .0309) nor unhelpful (.0017, BCa 95% CI of -.0060 to .0109) attributions had a significant effect on behavioural response mediated through reappraisal and suppression. Examination of the specific indirect effects indicates that neither reappraisal nor suppression is a mediator, since their 95% CI all contain zero.

3.4 Summary of Results

There was a significant positive correlation between knowledge and behavioural response to challenging behaviour. There was a significant positive correlation between helpful attributions and behavioural response to challenging behaviour. No significant relationships were found between emotion regulation styles and

attributions about challenging behaviour. Knowledge made a significant contribution to the variance of behavioural response, helpful attributions did not. Emotion regulation styles did not moderate nor mediate the relationship between attributions of challenging behaviour and behavioural response to challenging behaviour.

Chapter 4 – Discussion

This study was designed to provide further understanding of staff behavioural responses to challenging behaviour. Correlation and regression analyses were conducted to examine the significance of knowledge and attributions in predicting the helping behaviour of care staff towards challenging behaviour. In addition, the study sought to examine Wiener's (1980, 1986) model of helping behaviour using more ecologically valid measures. The relationship between attributions and helping behaviour was examined further to investigate whether emotion regulation styles moderate and/or mediates the relationship.

The discussion will outline the results of each of the study's hypotheses before discussing each in turn. The ethical and clinical considerations of the study will then be discussed followed by the strengths and limitations of the study. The discussion will end with suggestions for future research before the conclusions are presented.

4.1 Discussion of Results

Hypothesis 1: *there will be a significant positive relationship between knowledge of challenging behaviour and behavioural response to challenging behaviour.*

There was a significant positive correlation between knowledge of challenging behaviour and behavioural response to challenging behaviour. This result suggests that if staff have higher knowledge of the term and of management of challenging behaviour they are more likely to respond to challenging behaviour in a "helpful" way. As highlighted in the introduction, a limitation to previous studies was a failure to establish whether knowledge had a positive relationship with actual practice

(Lowe *et al.*, 2007b; McGill *et al.*, 2007; McKenzie, 2000). The current result provides support for the rationale for training staff in positive behavioural support approaches, however, the clinical significance of this result is limited due to the small effect size. This suggests that there is a positive yet weak association between knowledge and helping behaviour as defined in the current study. It is considered that the small effect size may be attributed to measurement error. This will be discussed further in section 4.4.3.

Hypothesis 2: *there will be a significant relationship between attributions and behavioural response to challenging behaviour, i.e. there will be a significant positive relationship between helpful attributions and behavioural response, and a significant negative relationship between unhelpful attributions and behavioural response.*

There was a significant positive relationship between helpful attributions and behavioural response to challenging behaviour, however, there was no significant relationship found between unhelpful attributions and behavioural response to challenging behaviour. This result provides partial support for Weiner's (1980, 1986) model of helping behaviour and suggests that staff who make more helpful attributions about challenging behaviour, which are external, uncontrollable, unstable, and universal to the person with a learning disability, are more likely to respond in a helpful way to challenging behaviour. It is important to note however, that this association had a small effect size, therefore must be interpreted with caution. This is the first study to report a significant association between the combination of attributions and helping behaviour. In contrast to this finding, one study found a positive association between controllability and intention to help,

which suggested that the higher the degree to which staff attribute the cause to be controllable, the more likely they will be to offer help (Wanless & Jahoda, 2002).

There are important distinctions to make between the methods employed in this study and those reported in previous studies. Firstly, the current study analysed written responses to measure causal attributions and developed a measure designed specifically for this study to measure reported staff behavioural responses. Whereas the studies reviewed in the introduction primarily used scaled measures and examined intention to help (e.g. Dagnan *et al.* 1998; Hill & Dagnan, 2002; Lucas *et al.*, 2008; Sharrock *et al.*, 1990; Stanley & Standon, 2000; Wanless & Jahoda, 2002; Wilner & Smith, 2008b). Secondly, previous studies examined the relationship between each individual attributional dimensions and intention to help, whereas the current study examined the combination of helpful attributions and their influence on helping behaviour. Given these methodological differences it is difficult to make comparisons, however the current study found a positive relationship between helpful attributions and helping behaviour which supports the view that within a learning disability context, the combination of attributions may be more applicable than the contribution of each individual dimension. It is also possible that the small effect size may have been attributed to measurement error which will be discussed later in detail.

The current study found no significant negative relationship between unhelpful attributions and behavioural response to challenging behaviour. Weiner (1980, 1986) proposed that if people made attributions about the causes of a person's behaviour that were controllable, internal, stable, and personal, they would be more likely to experience negative emotions and in turn be less likely to provide help. This is the first study to examine whether the combination of unhelpful attributions

has a significant relationship with helping behaviour. Studies examining individual attributions and intention to help also found no significant negative relationship between these two variables. It is possible however that the LACS and other methods employed to measure attributions are not sensitive enough to detect any significant negative relationship between unhelpful attributions and helping behaviour.

Issues regarding the validity of scaled measures were raised in the introduction, however previous studies which have utilised the LACS have suggested that it may not be sensitive enough a measure to contribute to the empirical and theoretical literature (Noone *et al.*, 2006; Ferris, 2008). Ferris (2008) reported that staff attributions following staff training had shifted on a qualitative level to represent more closely those consistent with the behavioural model (external, uncontrollable, unstable) however the scoring system used to code the verbal responses (the amended version of the LACS; Brewin *et al.*, 1991) did not appear to detect this shift. The strengths and limitations of the LACS method will be explored further in section 4.4.3.

Hypothesis 3: *there will be a significant relationship between individual differences in emotion regulation styles and attributions, i.e. a significant positive relationship between reappraisal and helpful attributions, and a significant positive relationship between unhelpful attributions and suppression, a significant negative relationship between reappraisal and unhelpful attributions, and a significant negative relationship between suppression and helpful attributions.*

There were no significant relationships found between the emotion regulation styles of reappraisal and suppression and unhelpful and helpful attributions. This finding

has implications for two theoretical frameworks. Firstly, the experimental research on emotion regulation suggests that cognitive reappraisal and expressive suppression have different affective consequences for individuals (John & Gross, 2003). Reappraisal is activated early on in the emotion generative process therefore is reported to alter the emotion trajectory allowing for the individual to subjectively experience positive emotion, and reduce the subjective experience of negative emotions (e.g. Gross, 1998b; Gross & Levenson, 1993, 1997). On the other hand, suppression is activated after the emotion has been generated suppressing the expression of both positive and negative emotions, however reducing the subjective experience of positive emotions with no impact on the subjective experience of negative emotions (e.g. Gross, 1998; Gross & Levenson, 1993, 1997). There are important conceptual factors to consider in interpreting the results. The affective consequences of reappraisal and suppression were examined in relation to the negative emotion of disgust and sadness (e.g. Gross, 1998; Gross & Levenson, 1993) and the positive emotion of amusement (e.g. Gross & Levenson, 1997), whereas Weiner's (1980, 1986) model suggests that helpful attributions are likely to give rise to the positive emotion sympathy, and unhelpful attributions are likely to generate negative feelings of anger and disgust. Therefore, although on a theoretical level emotion regulation strategies can be employed to regulate all forms of positive and negative emotions (Gross & John, 2003), based on the evidence base it is unclear whether reappraisal and suppression regulate all variations in emotion.

On the other hand, it is also considered that Weiner's (1980, 1986) model may not accurately reflect the emotional experiences of staff working with people who display challenging behaviour. Previous research by Bromley & Emerson (1995) and Mitchell & Hastings (1998) identified a wider range of emotions than is reflected in Weiner's (1980, 1986) model, namely a dimension of anxiety/fear. Although

these emotions were included in the experimental studies examining the affective consequences of reappraisal and suppression, it is possible that the experimental designs were limited in the level of intensity of emotions generated by the films and still slides. This raises the question of whether cognitive reappraisal and expressive suppression can be applied to the range and intensity of emotions generated by incidents of challenging behaviour in real life situations.

Hypothesis 4: *knowledge of challenging behaviour and helpful attributions will be significant predictors of behavioural response to challenging behaviour.*

Together knowledge and helpful attributions accounted for 13 % of the variance of helping behaviour. Knowledge significantly contributed to 11.5% of the variance, whereas the contribution of helpful attributions was not significant. This is consistent with previous research as few studies have found a direct relationship through regression analysis from attributions to helping behaviour (Jones & Hastings, 2003).

The significant contribution of knowledge to reported practice when attributions are controlled for provides further support that an increase in knowledge of the term challenging behaviour and of management approaches consistent with positive behavioural support will significantly increase the likelihood of staff responding to challenging behaviour in a more helpful way. However, it is acknowledged that there is a large percentage of the variance unaccounted for by knowledge alone. This suggests that there are other key influential factors which mediate the relationship between knowledge and actual practice. It is recommended that further research examines the influence of organisational culture on the relationship between knowledge and practice and which factors are most influential. Indeed, McKenzie *et*

al., (2000) reported that for some organisations, staff knowledge may influence a large percentage of actual staff practice, whereas it may be that for some, organisational factors may prevent staff knowledge from being applied. This will have significant implications for clinical practice, which will be discussed in more detail below. Finally, it is also possible that the measure of knowledge used was not sensitive enough to detect a larger proportion of the variance. This will be discussed further in section 4.4.4.

Hypothesis 5: *individual differences in emotion regulation style will moderate and mediate the relationship between attributions and behavioural response to challenging behaviour, i.e. for moderation, reappraisal will strengthen both helpful and unhelpful attributions and suppression will weaken the relationships. For mediation, reappraisal and suppression will account for the relationship between attributions and behavioural response – attributions will predict a helpful behavioural response through reappraisal, attributions will predict an unhelpful behavioural response through suppression.*

Firstly, reappraisal did not moderate nor mediate the effect of helpful or unhelpful attributions on helping behaviour. Experimental studies found that reappraisal did not alter the subjective experience of positive emotions and reduced the subjective experience of negative emotions (Gross, 1998b; Gross & Levenson, 1993, 1997). It was anticipated that a reappraisal style would not alter the subjective experience of positive emotions generated by helpful attributions, and would alter the subjective experience of negative emotions generated by unhelpful attributions, which would in turn lead to more helping behaviour. However, the failure to find a significant interaction effect does not support these associations. Moreover, the individual

difference research suggested that the frequent use of reappraisal is associated with enhanced psychological well-being. Reappraisal was characterised by fewer symptoms of depression, more satisfaction with life, higher self-esteem, more optimistic, higher levels of environmental mastery, personal growth, self-acceptance and a clearer purpose in life (Gross & John, 2003). Thus, if psychological well-being is a significant factor to consider in the ability of staff to respond appropriately to challenging behaviour, it was anticipated that a reappraisal style would be positively associated with helping behaviour. The results do not support this, as reappraisal did not positively predict the variance of helping behaviour.

Secondly, suppression did not moderate nor mediate the effect of helpful or unhelpful attributions on helping behaviour. Experimental studies found that suppression did not alter the subjective experience of negative emotions and reduced the subjective experience of positive emotions (Gross, 1998b; Gross & Levenson, 1993, 1997), therefore it was anticipated that a suppression style would alter the subjective experience of positive emotions generated by helpful attributions, and would not alter the subjective experience of negative emotions generated by unhelpful attributions, which would in turn lead to less helping behaviour. The failure to find a significant interaction effect does not support these associations. Furthermore, the individual difference research suggested that the frequent use of suppression was associated with reduced psychological well-being characterised by higher self-reported stress-related symptoms and poor interpersonal functioning (Gross & John, 2003; Moore et al., 2008). Thus, as noted above, if psychological well-being is a significant factor to consider in the ability of staff to respond appropriately to challenging behaviour, it was anticipated that a suppression style would be negatively associated with helping behaviour. However, the results do not

support this, as suppression did not negatively predict the variance of helping behaviour.

It is considered that there may be an interaction or indirect effect of emotion regulation styles on the relationship between attributions and helping behaviour, however that the effect is not significant with regard to the emotion regulation strategies of cognitive reappraisal and expressive suppression. The process model of emotion regulation (Figure 6, section 1.11.4) illustrates that there are a number of other emotion regulation strategies which can be employed at different stages of the emotion generative process. These include situation selection, situation modification, and attentional deployment. It is possible, therefore, that in response to incidents of challenging behaviour, these other strategies may be more beneficial in influencing behavioural response of staff compared to reappraisal and suppression. Finally, it is considered that the study did not have enough statistical power to detect an interaction effect. The factors which may have impacted on the statistical power of the study will be discussed in detail in section 4.4.4.

4.2 Ethical Considerations

The results have raised some important ethical issues to consider. Firstly, the responses showed that the participants had limited knowledge of the term and management of challenging behaviour. This is consistent with the findings of previous studies (e.g. McKenzie *et al.*, 2000; Rae, 2007) and raises concerns regarding the ability of staff to provide the appropriate care to service users. The consequences of challenging behaviour for the person with a learning disability is well documented which include seclusion, neglect and emotional and physical abuse (Emerson *et al.*, 2001). Indeed one particular participant reported using physical intervention and implied in the response that they did not have the appropriate

training to implement this safely. As all questionnaires were anonymous, it was not possible to address this directly, however, this particular response was received via postal questionnaire, in which all services are commissioned by the local authority. As the results will be disseminated to the local authorities who agreed to take part in this study, feedback will also be provided regarding the identification of the practice regarding physical intervention.

4.3 Clinical Implications

The results also raise important clinical implications. Knowledge was found to be a significant predictor of helping behaviour towards incidences of challenging behaviour. Knowledge of challenging behaviour will therefore be an important factor to consider in the assessment and intervention of challenging behaviour. However it is important to consider that knowledge alone only accounted for 10% of the variance of staff practice. Reviews have reported that staff training can be time consuming and expensive (Zianik & Bernstein, 1982). Based on the results of the current study, it is important to question whether this is an efficient use of clinical time in order to influence the greatest changes in staff practice. This highlights the importance of other influential factors which are likely to contribute to staffs' ability to implement this knowledge (Allan, 1999). Firstly, it is likely that a large proportion of the variance may be accounted for by the organisational culture. Staff may have the knowledge of how to respond positively to challenging behaviour, however the organisational culture may not be supportive of such practice. (McKenzie *et al.*, 2000). Secondly, given the abundance of research conducted on the application of Weiner's (1980, 1986) model of helping behaviour in learning disability services, coupled with the results of the current study, it is suggested that this model has limited clinical application in this area. Some of the possible reasons for this will now be outlined.

4.4 Limitations of Weiner's (1980, 1986) Model As Applied to Learning Disability Services

Firstly, this cognitive-emotional model reflects the basic assumption that an unhelpful attribution (stable, controllable, personal, internal) can be modified to reflect a more helpful attribution (unstable, uncontrollable, universal, external). This in turn will produce changes in emotion and result in more helpful behavioural responses. It can be argued however, that some helpful attributions may indeed be unhelpful. For example, the cause of challenging behaviour may be attributed to a stable genetic cause (e.g. Prader-Willi syndrome, Lesch-Nyhan syndrome; Murphy, 1994). Therefore, it may be more unhelpful to think of such behaviours as being unstable, due to the stability of the condition and its associated behaviours. Thus, changing the form of this attribution may be unhelpful in such cases and may invoke feelings of failure and reduce motivation in staff rather than enhancing it.

Furthermore, the current study did not find any clinical value in promoting a reappraisal emotion regulation style. Therefore, if changing the form (i.e. reappraising) of cognitions can be clinically unhelpful, it is proposed that changing the function of cognitions may be a more helpful approach. Changing the function and a person's relationship with their cognitions has origins in Acceptance and Commitment Therapy (ACT; Hayes, 2004). In addition to changing a person's literal responses to their cognitions, ACT also aims to treat emotional avoidance and a person's ability to make commitments to behaviour change (Hoffman & Asmundson, 2008). On a theoretical level, this model may have clinical utility when considering staffs' cognitive, emotional and behavioural responses to challenging behaviour. Initial research findings on using this approach in care staff are

promising (Noone & Hastings, 2009, 2010; Singh et al., 2006; 2009). It is recommended that further research is conducted on examining the processes of change and its clinical significance in this area.

The limitations of this study must also be taken into account when interpreting the above clinical implications. The limitations along with the strengths of the study will now be discussed.

4.5 Strengths and Limitations

4.5.1 Design

The current study utilised a self-report questionnaire design. The strengths of this design are that postal questionnaires are anonymous, easy to administer and they are cost effective, which is of particular value when trying to capture large sample sizes across a large geographical area. One of the main criticisms of using self-report questionnaires is response bias in that it cannot be determined whether what is reported is indeed accurate. Therefore observational design or mixed design studies would be a more ecologically valid method.

The main drawback of postal questionnaires is the low response rates. Measures were taken to increase the response rate, including printing the questionnaire onto coloured paper and personalising each questionnaire pack with a hand-written post-it note and a follow-up phone call was made to the project managers (Edwards, *et al.*, 2002). However, the postal questionnaire only produced a response rate of 8%, 15% lower than the average (23%) response rate for psychological research (Edwards, *et al.*, 2002). In order to increase the sample size, the questionnaires were put online and e-mailed to various organisations, and were posted on specialist challenging behaviour and learning disability forums across the UK. Although it is not possible

to determine the response rate, only fifty-one questionnaires were completed therefore it is assumed that this is extremely low considering the questionnaire was posted nationally. The possible reasons for this will now be discussed.

Firstly, the majority of the questionnaires were sent to the project/organisation managers who were requested to pass them on to their staff team. It is acknowledged that the project managers may not have passed them on or may only have passed on to a select number of participants. Furthermore, the majority of the variables were measured using open-ended questions which may have deterred some participants from completing all questions given the time involved in planning a written response. As noted in the method section, 26 online questionnaires were incomplete. It is possible that the questionnaire layout deterred participation. In order to reduce this, the participants were provided with information regarding how many pages they were required to complete and the ERQ was placed before the open-ended questions to encourage participation. It is also possible that the managers screened the questionnaires in the first instance to determine the suitability of the study for their staff team and therefore did not complete the questionnaires themselves. It is also acknowledged that the staff who were given the postal questionnaires may have been deterred from participating as the principal researcher was currently or had in the past provided clinical psychology input to their service. Although measures were taken to ensure anonymity and confidentiality, it is considered that the staff may not have believed that this would be upheld, which may reflect a culture of blame and mistrust.

Another limitation is that the level of design was not consistent throughout. The study was designed to measure a general level of knowledge, attributions and emotion regulation style, and the behavioural response to an isolated incident of

challenging behaviour. With regard to the latter, it is acknowledged that the outcome variable has a different level of design, however careful consideration was given to whether a general measure of behavioural response would provide as valid a measure of helping behaviour. For example, asking participants how they normally respond may have resulted in responses to several different incidents, therefore it would have been difficult to establish whether positive approaches had been applied to any one individual incident. Additional strengths and limitations of this measure will be discussed in section 4.5.3.

It is also important to highlight that the design did not place limits on the incident of challenging behaviour with regards to measurement of causal attributions and behavioural response, therefore it is acknowledged that there may be other confounding factors which may have contributed to the results. More specifically, previous studies have reported on the significance of level of learning disability (Tyan & Allen, 2000) topography (Stanley & Standon, 2000) and function of challenging behaviour (Hastings *et al.*, 2003) and the influence on attributions. However, epidemiology studies have indicated that categorising challenging behaviours as a single topography or form may be unrepresentative of the real presentation of challenging behaviours as many forms co-exist (Qureshi, 1994). Despite the limitations outlined, the main strength of this design has provided the current study with a cost effective method of collecting data from a large sample of the target population.

4.5.2 Sample

The sample was restricted to paid care staff who currently worked with an adult with a learning disability who displayed challenging behaviour. The majority of the

research in this area has been conducted using paid care staff (e.g. Allen, 1999b), with limited research carried out on unpaid carers (i.e. legal guardians). On review of the attribution and cognitive-emotional literature, Allen (1999b) reviewed unpaid and paid carers as separate populations. An important distinction to make is the influence of the organisational culture on paid carers, a factor which would be less relevant in a family home. Another limitation to the current sample is that it did not directly target staff working in an inpatient setting. Previous research has indicated that staff working in inpatient settings are more likely to report use of reactive strategies rather than proactive strategies (Watt *et al.*, 1997), therefore it was anticipated that inclusion of staff in patient settings may have skewed the results. Further research is required to generalise these findings across settings and populations.

4.5.3 Outcome Measures

- **Attributions**

Staff written responses to an open-ended question was coded using the LACS; an attributional content analysis coding system. This method has high ecological and content validity and the pilot study revealed excellent levels of inter-rater reliability. The LACS has been used in previous studies examining staff causal attributions (Noone *et al.*, 2006; Ferris, 2008; Rae, 2007; Snow *et al.*, 2007), however an adaptation was made to the scoring method to allow for the examination of the presence and combination of helpful and unhelpful attribution scores rather than measuring each attributional dimension as separate constructs. In addition, the above studies coded verbal responses rather than written responses, however as the current study recruited a large sample across a large geographical area this would not have been practical.

The LACS conceptualises attributions as constant variables, which do not vary in degree, however this measure provided the opportunity to determine whether attributions were present or not. This is an important distinction to make between the scaled and non-scaled attribution measures. It can be argued that Weiner's (1980, 1986) model conceptualised attributions as being either present or not present, however it is suggested that this may not reflect how individuals make attributions in practice (Peterson et al., 1982). The ASQ (Peterson, et al., 1982) measures the degree to which participants use each attributional dimension for the major cause of an event as there is likely to be more than one cause attributed. Peterson *et al.* (1982) acknowledged Weiner's (1980, 1986) perspective, however noted that conceptualising a cause as being either stable, controllable, or internal was deemed to be subjective, therefore what one person believes to be stable may not be stable to another. Participants in the current study provided various possible reasons for challenging behaviour, however no measure was taken as to which reason they believed to be the most important. Thus, the LACS makes assumptions that each attribution has equal weight, however this may result in qualitative information loss.

- **Behavioural Response**

A significant strength of this study is that it provided a valid definition of helping behaviour. The behavioural response measure did not restrict responses to an immediate action, however derived responses which reflected more closely with helping behaviour in a learning disability context, and included a longer-term response to allow for the measurement of proactive strategies. There are however some points to be considered. Firstly, this is a self-report measure, therefore it is not possible to determine the validity of the response as a reflection of whether this was

indeed how the participants responded to the incident of challenging behaviour. In addition, although the measure has high content validity in that the coding is based on best practice guidelines, it is proposed that there may be other areas of practice which would also constitute good practice and thus, helpful behaviour, not measured in the current study. For example, McKenzie *et al.*, (2002) outlined the criteria for Periodic Service Review (PSR) which includes a wide range of areas, including measurement of staff attendance and quality of data recording in addition to reactive and proactive strategies. In considering the number of individual and systemic variables that may be implicated in how staff respond to challenging behaviour, direct observation of a specific person, their staff and the culture would provide qualitative information that the current study failed to address.

- **Knowledge**

A particular strength of this measure was that it had high construct and discriminant validity based on the principles of best practice (Ball *et al.*, 2004; BPS, RCP, BPS & RCSLT, 2007), and a substantial level of inter-rater reliability was reported. The results indicated that knowledge contributed to 10% of the variance of helping behaviour, however it is possible that knowledge influences practice to a greater extent but the range of knowledge required for this was not measured in the current study. Indeed, McKenzie *et al.*, (2000) measured knowledge in the following areas: criteria for learning disabilities; definition and management of challenging behaviour; client choice and duty of care.

- **Emotion Regulation Questionnaire (ERQ)**

The ERQ has been reported to have adequate reliability and validity and as it only consists of 10 items, it is a relatively quick and easy way to measure individual differences in the emotion regulation styles of cognitive reappraisal and expressive

suppression. Limitations to this measure include firstly, that the questionnaire was developed using a sample of undergraduate students, with further validation carried out using a sample of adults in their 60s. The mean age of the sample used in the current study was 42 years, therefore further validation of the ERQ is required for the middle age range of the adult population across various levels of educational attainment. Secondly, as previously noted the ERQ only measures a limited range of emotion regulation strategies. Alternative outcome measures include the Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski et al., 2001) and the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The CERQ is however limited in that it only includes functional and dysfunctional cognitive strategies, whereas the DERS measures a range of cognitive and behavioural but focuses mainly on the dysfunctional strategies. In recognition of these limitations, Phillips and Powers (2007) developed a new measure of emotion regulation for use in the adolescent population. The structure of the model includes items which address both functional and dysfunctional, in addition to internal (cognitive) and external (behavioural) strategies. Initial analysis revealed good psychometric properties in adolescents. The Racza (2005) study identified clear external-dysfunctional emotion regulation strategies (e.g. drinking alcohol) and internal-functional strategies (e.g. cognitive reappraisal) in staff in learning disability services. This indicates that this outcome measure may have face validity in a support staff population. Finally, it is also important to remember that there are difficulties in using a self-report measure of emotion regulation, as it is not possible for individuals to report on all aspects of their emotion regulation, since many strategies may be unconscious (Gross, 1998).

4.5.4 Statistical Analysis

Moderated multiple regression (MMR) was conducted to investigate the moderating effect of emotion regulation styles on the relationship between attributions and helping behaviour. As discussed previously, moderating effects are often difficult to detect and there are various factors to consider which may have influenced the statistical power of the study (Aguinis, 1995; Aguinis & Gotterfred, 2010; Holmbeck, 1997; Jaccard & Wan, 1995; McClelland & Judd, 1993; Russell & Bobko, 1992)

- **Variable Distribution**

Firstly, Aguinis (1995) stated that the distribution of the predictor variables may be restricted if they are derived from a biased sample, which in turn is reported to reduce statistical power. Although the current study aimed to access a random sample of staff working in the community, the raw data were not normally distributed and transformations were applied. It is possible that the project managers were selective in their distribution of questionnaires and may have only forwarded on to staff whom they thought would 'perform' the best, thus biasing the sample.

- **Reliability**

Another factor which has been reported to reduced statistical power in MMR is when predictor variables have less than perfect reliability, which impacts on the reliability of the product term (attributions multiplied by ERQ), therefore the regression coefficient associated with the product term underestimates the population coefficient (Aguinis, 1995). Although the reliability of the predictor variables in the current study are adequate, they are less than perfect, therefore statistical power was reduced. Moreover, Aguinis and Gotterfred (2010) argued that, combined with less

than perfect reliability of the outcome variable, this attenuates the relationship between the variables even further.

- **Scale Coarseness**

Statistical power is also reported to be influenced by the scales of measurement used. Russell & Bobko (1992) noted that likert scales often produce 'scale coarseness', which is a term used to describe the occurrence of information loss when using scales which do not reflect all potential responses available. For example, given that the interaction term is a product of the predictor variable and moderator variable, this produces a term which has several possible distinct responses. For a predictor variable with a 7-point likert type scale multiplied by a moderator variable with a 7-point likert type scale would produce an interaction term with a 7 multiplied by 7 amount of distinct responses (Aguinis, 1995). Therefore, if the outcome variable is also measured on a 7-point scale, rather than a 49-point scale (7 multiplied by 7), there is information lost between the outcome variable and the interaction term, which is reported to underestimate the population moderating effect (Aguinis, 1995). It is therefore likely that there was a considerable degree of scale coarseness in the current study, given that the outcome variable behaviour response was measured on a small range of scores (0-4).

- **Sample Size**

Finally, it is proposed that the sample size of the current study did not have adequate power to detect a significant moderating effect. The sample size of the current study was based on the recommended sample size for correlation and multiple regression analyses with three independent variables for detecting a medium effect size (Green, 1991). Thus it was reported that a sample size of 85 for correlation and 77 for regression analysis would be adequate, thus the current sample size of 107 was more

than adequate. However, given the difficulties in detecting moderator relationships produced by low power, it is reported that sample sizes need to compensate for this and a sample size closer to 150 would detect a small to medium effect size (Miles & Shelvin, 2001).

4.6 Directions for Future Research

Areas for future research have been identified throughout the discussion, however these will now be reviewed together in this section. Firstly, the results indicated that knowledge and attributions have significant positive relationships with helping behaviour, however when regressed onto helping behaviour, knowledge was the only variable which significantly contributed to the variance. It is important to acknowledge that other individual factors such as age and experience along with a range of other factors such as level of learning disability, topography of challenging behaviour, and function of challenging behaviour may significantly contribute to the variance, or moderate and/or mediate the effects of one variable onto helping behaviour. As there was a large proportion of the variance unaccounted for, further examination of other variables are warranted. Also of importance is the examination of systemic variables and how these may directly or indirectly influence individual variables upon staff responses. Formal and informal cultures have been identified (Hastings, 2005; Hastings & Remington, 1994b) both of which require further examination. In considering the design limitations of the current study, a more ecologically valid design would be to incorporate individual with systemic variables using a mixed method design of questionnaires, direct observations and case file reviews.

Section 4.4 discussed the limitations of Weiner's (1980, 1986) model of helping behaviour and proposed that on a theoretical level, an ACT approach may have more clinical value, as changing the form of cognitions may be more unhelpful to some staff. Another alternative to Weiner's (1980, 1986) model of helping behaviour is the Theory of Planned Behaviour (Ajzen, 1991). Within this framework, it is proposed that staff intentions to perform behaviours (i.e. a helpful response to challenging behaviour) can be predicted by attitudes towards the behaviour (beliefs about the consequences of performing the behaviour), and subjective norms (perceived expectations from peer group/management). Ajzen (1991) reported that these intentions together with perceived behavioural control (perceived ease of difficulty in performing the behaviour) have been shown to account for a large proportion of actual behaviour. It is proposed that application of this model within learning disability services may provide a valuable framework from which to understand the influence of informal and formal culture on staff responses to challenging behaviour.

4.7 Summary and Conclusions

The consequences of challenging behaviour for the person with a learning disability and for the staff providing support are well documented. Current models of challenging behaviour highlight the important role of staff responses in the development and maintenance of such behaviours. There is great value, therefore, in understanding the factors which may help to enhance understanding of staff responses, providing opportunities for clinical intervention, and improvements in the quality of life for people with learning disabilities who display challenging behaviour.

There is a considerable body of research which has examined variables which may help to understand staff responses to challenging behaviour. These include the organisational culture, a knowledge deficit, causal attributions, and staff stress levels. Previous research has found only partial support for Weiner's (1980, 1986) model of helping behaviour within a learning disability context. The study developed a clinical definition of 'helping behaviour', and examined knowledge of challenging behaviour and the combination of attributions from Weiner's (1980, 1986) model in predicting staff helping behaviour. In addition the emotion regulation strategies of cognitive reappraisal and expressive suppression were investigated in moderating the relationship between attributions and helping behaviour, developing an overarching framework between attributions, staff stress and positive staff approaches to challenging behaviour.

Firstly, through correlation analyses, knowledge and helpful attributions were significantly correlated with helping behaviour, however, when regressed onto helping behaviour, only knowledge significantly contributed to the variance. No significant relationships were found between cognitive reappraisal or expressive suppression with helpful or unhelpful attributions. No moderating nor mediating effect was found for emotion regulation styles on the relationship between attributions and helping behaviour.

Discussion of the results included acknowledgement of theoretical, conceptual and methodological issues. A particular strength of the current study is that it developed a clinical definition of "helping" behaviour in response to challenging behaviour. Therefore, on a theoretical level, when attributions are regressed onto a measurement of reported staff behaviour the results indicated that Weiner's (1980, 1986) model is not supported. Knowledge was a significant predictor of helping behaviour

accounting for 10% of the variance. From a clinical perspective, this suggests that training to increase staff knowledge in positive behavioural support approaches will be effective in influencing staff practice, whereas any intervention to increase staff helpful attributions or decrease unhelpful attributions will have no significant impact.

Important limitations and directions for future research have been considered. Firstly, other individual and systemic variables must be examined in relation to the predictive variance of helping behaviour. It is recommended that research continues to work within a clinical definition of helping behaviour rather than intention to help. It is also considered that there is limited clinical utility in pursuing Weiner's model in a learning disability context and alternative models, such as ACT and mindfulness approaches may be more beneficial in considering the emotional, and behavioural responses of staff to challenging behaviour.

It is hoped that once these methodological, conceptual and theoretical issues are addressed, this will provide some clinically meaningful insights into how best to support staff teams in managing challenging behaviour, and most importantly improve the quality of life of people with a learning disability whose behaviours challenge services.

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Appendix I

Summary and Critique of the Major Papers Reviewed for this Thesis

Authors	Sample Size	Design/Analysis	Relevance	Strengths	Weaknesses
Bailey et al. (2006) The response to challenging behaviour by care staff: emotional responses, attributions of cause and observations of practice	N = 43 Staff working in LD	Correlations and Exploratory Analysis	Investigated the relationships between attributions, emotions and their responses to actual CB.	Examined the relationship between willingness to help and observations of practice.	Small sample size. Observations and thus helping defined as an immediate response to CB
Dagnan et al. (1998). Care staff responses to people with learning disabilities and challenging behaviour: A cognitive-emotional analysis	N = 40. Only 20 staff working with CB.	Correlations and Path Analysis using a recursive regression approach.	Aim was to test the role of emotional response in the model outlined by Weiner (1980, 1986).	Regression analysis	Small sample size for regression analysis. Intention to help rather than actual helping.
Gross (1998). Antecedent- and Response-Focused Emotion Regulation: Divergent Consequences for Experience, Expression, and Physiology.	N = 120 undergraduates	MANOVAs	Investigated distinctions between cognitive reappraisal and expressive suppression	All three domains measured: experience, expression, physiology Control group	Undergraduate students Manipulation of only disgust
Gross & John (2003). Individual differences in cognitive reappraisal and expressive suppression: Affective, cognitive and social consequences and implications for well-being.	Three studies. Samples ranged from ?-?	Exploratory and Confirmatory Factor Analysis.	Established the psychometric properties of the ERQ	Large samples, validity and reliability of measure	Undergraduate students
Hill & Dagnan (2002). Helping, attributions, emotions and coping style in response to people with learning disabilities and challenging behaviour.	N = 33. Staff working with LD and CB.	Correlations and regression analysis	Examination of Weiner's model. Extending to look at coping styles	Regression analysis	Small sample size for regression analysis.
Jones & Hastings (2003). Staff reactions to self-injurious behaviours in learning disability services: Attributions, emotional responses and helping	N = 123 Staff working in LD and CB	Correlations	Aim was to explore an amended version of Weiner's (1980) helping behaviour model.	Compared responses to SIB versus 'other' CB. Large sample size. Helping behaviour defined	Vignettes to depict challenging behaviour. Correlations

Lowe et al. (2007b). Staff Training in Positive Behaviour Support: Impact on Attitudes and Knowledge.	N = 275 staff	Mann-Whitney <i>U</i> -tests Spearman's rho	Staff training in PBS to increase knowledge	Large sample, measures taken at 3 different time points. Knowledge ecologically valid	No measure of practice
Lucas et al. (2009). The causal attributions of teaching staff towards children with intellectual disabilities: a comparison of 'vignettes' depicting CB with 'real' incidents of CB.	N = 60 classroom staff	Single repeated measures factor. Vignettes versus real incidents Correlations	Investigation of the use of vignettes versus real incidents of CB.	Ecological validity	Possible order effects of real incidents followed by vignettes based on real incidents Single item to measure helping
McGill, et al. (2007). Impact of Extended Education/Training in Positive Behaviour Support on Staff Knowledge, Causal Attributions and Emotional Responses	N = 35, 57, 52, 51, 79. Depending on outcome measure	Within subjects ANOVA Friedman test	Staff training to increase knowledge of CB and appropriate responses	Training in PBS	Action subscale of the SIBUQ used to measure staff practice.
McKenzie et al. (2000). An evaluation of the impact of a one-day challenging behaviour course on the knowledge of health and social care staff working in learning disability services.	N = 59 staff	One-way ANOVA	Staff training to increase staff knowledge	Control group Measure of knowledge: good levels of validity and reliability. Long follow-up period	No measure of practice
McKenzie et al. (2002) The Impact of Training and Staff Attributions on Staff Practice in Learning Disability Services: A Pilot Study	N = 36 staff for training N = 14 staff for PSR	T-tests, Bonferroni test was used to correct for multiple comparisons	Staff training to increase staff knowledge: impact on attributions and staff practice	Included measure of actual staff practice	Small sample size for PSR. No control group
Racza (2005). A focus group enquiry into stress experienced by staff working with people with challenging behaviours.	N = 19 direct care staff	Qualitative Content Analysis	Focus group enquiry examining the emotional, cognitive, and behavioural experiences of staff	Clear themes identified, related to current empirical and theoretical research	Small sample size. No examination of staff behavioural response to challenging behaviour.
Rose & Rose (2005). Staff in services for people with intellectual disabilities: the impact of stress on attributions of CB.	N = 107	Correlations Structural Equation Modelling (SEM)	Examination of the relationship between staff stress and attributions.	Good review of literature. Extended the current evidence base.	SEM is a large-sample technique (N>200). Limited power. Only measured intention to help.

Rose et al. (1998). The impact of a stress management programme on staff well-being and performance at work.	N = 14 support staff	MANOVA to measure within subject change pre- and post-intervention	Investigated the relationship between staff stress and staff performance	Observations of practice Effect size calculated (medium)	Small sample size Observations only conducted in the intervention houses
Sharrock et al. (1990). Explanations by professional care staff, optimism and helping behaviour: an application of attribution theory	N = 38 staff working in a mental health setting	Correlations Regression	Test of Weiner's (1980, 1986) predictions	Regression	Single item to measure helping, measured intention to help. Small sample size for regression analysis
Stanley & Standon (2000). Carers' attributions for challenging behaviour	N = 50 staff working with LD and CB	2 X 3 ANOVA	Application of Weiner's (1986) model of helping to the care of clients with LD	Comparison of topography and level of dependency	7 x 9-point likert scales to measure all variables Measured intention to help
Wanless & Jahoda (2002). Responses of staff towards people with mild to moderate intellectual disability who behave aggressively: a cognitive emotional analysis.	N = 38 staff working with LD and CB	One-way ANOVAS with repeated measures (vignettes vs real incident). Correlations	Application of Weiner's (1980) model of helping behaviour	Comparison of two different methodologies and implications for Weiner's (1980) model. Ecological validity	Measured intention to help
Weigel et al. (2006). Challenging behaviour and learning disabilities: The relationship between expressed emotion and staff attributions.	N = 15	Non parametric Wilcoxon sign test McNemar Test	Examination of expressed emotion and attributions.	Investigated differences in EE and attributions towards CB and non-CB service user	Small sample size. No measure of staff practice.
Willner & Smith (2008b). Can attribution theory explain carers' propensity to help men with intellectual disabilities who display inappropriate sexual behaviour?	N = 121 care managers and direct care staff	Correlations Stepwise regression analysis	Application of Weiner's (1980, 1986) model of helping behaviour	Regression Large sample Mediation analysis conducted	Measured effort rather than actual helping. Controlled for age, offence, gender, occupation

Appendix II

Guidelines Identified as ‘Essential’ Practice Supported by Level 1 Evidence

Essential practice

- “it is essential that....assessment attempts to establish the function of challenging behaviours, in order to determine the correct basis for an intervention” (Guideline 10.12)
- “interventions are most likely to be both effective and ethical if they follow the principle of functional equivalence.....the challenging behaviour can be replaced with a functionally equivalent but more positive behaviour.” (Guideline 12.15)
- “There are many clear ethical objections to the use of punishment as a technique.....It should never be used without a detailed functional analysis.....as a sole intervention strategy.....should only be considered where the challenging behaviour presents a serious risk to the person or others.” (Guideline 12.20.2)

(Ball et al., 2004, p45, p71, p76)

Appendix III

Guidelines Identified as ‘Good’ Practice Supported by Level 1 Evidence

Good Practice

- The use of extinction can be considered as a treatment option only under certain situations (Guideline 20.20.1)
- “Interventions for severe challenging behaviour should be routinely evaluated for their effectiveness” (Guideline 13.2)

(Ball et al., 2004, p75, p87)

Appendix IV

Description of Attributional Dimensions

Dimension	Definition
Internal-External	Internal causes are factors that originate from within the individual, such as a person's emotions, beliefs or personality characteristics. External causes are factors that originate with the environment, or as a result of circumstance, or as a result of the actions of other people (e.g. a family member failing to visit).
Personal-Universal	Personal factors must demonstrate that there is something special, unique or different about the agent or the target of the attribution (e.g. the person has difficulty making friends, they experience side effects of medication, they are experiencing a certain emotion). References to unique and unusual characteristics are coded as universal (e.g. personal trauma, not having enough stimulation).
Controllable-Uncontrollable	The attribution is coded as controllable only when the person could have realistically affected the outcome. Attributions are rated controllable when there is an indication that the person has chosen to act in a particular way. When a behaviour is thought to have been carried out due to factors that are beyond the persons control, the attribution is rated as uncontrollable
Stable-Unstable	This dimension is applied to the cause element of attributions as to whether the cause of the outcome was due to stable or unstable factors. Stable factors are things that are unchanging about a person or set of circumstances, or factors that will continue to affect future outcomes (e.g. something that had happened in the past, or having a communication problem). Unstable factors are short-term or transitory (e.g. being frustrated or bored).

Appendix V

Outcome Measures and Summary of Relevant Findings in Studies which Examined Weiner's (1980, 1986) Model

Authors	Outcome Measures	Summary of Relevant Findings
Bailey et al. (2006)	Challenging Behaviour Attributions (CHABA) Emotional Response to Challenging Behaviour (ERCB) Optimism and intention to help measured on a single item scale Observations of practice	Uncontrollable, stable and internal attributions positively correlated with negative emotion scale. Actual unhelpful correlated with negative emotions. Willingness to help negatively correlated with actual helping.
Dagnan et al. (1998)	Attributional Style Questionnaire (ASQ) Positive and Negative Affect Optimism and intention to help measured on a single item scale	Helping behaviour most predicted by optimism, which was most predicted by negative emotion which was most predicted by controllability
Hill & Dagnan (2002)	ASQ Anger and sympathy measured on a single item scale Helping measured on a single item scale Shortened Ways of Coping-R (practical coping and wishful thinking Self-Injurious Behaviour Understanding Questionnaire (SIBUQ)	More sympathetic when attributions more stable and less internal. Positive correlations between sympathy and practical coping style and intention to help. Practical coping style independent predictor of intention to help. Lack of significance for emotion
Jones & Hastings (2003)	Revised Causal Dimensions Scale (II) ERCB Forced choice – list of interventions	Correlation between dep/anger and unhelpful behaviour. Correlations between attributions and emotional response. No relationship to behavioural response.
Lucas et al. (2008)	ASQ (vignette versus real incident) Anger and sympathy measured on a single item scale Helping and optimism measure on a single item scale	Real incidents: Controllability correlated with anger, less sympathy, optimism and helping. Internality related to anger, less sympathy. Anger related to less sympathy, less optimism and less helping.
Sharrock et al. (1990)	ASQ Single item scale measuring anger, disgust, sympathy and pity Intention to helping measured on a single item scale Optimism scale of Optimism-Pessimism	Sympathy negatively correlated with controllability. Neither related to helping. Optimism was negatively correlated with stability, internality and controllability. Neither related to emotions.
Stanley & Standen (2000)	Seven single item scales rated attributions, emotional response, optimism and intention to help.	Positive affect best predicted carers' helping behaviour. Dependent on topography and level of LD

Wanless & Jahoda (2002)	All measures taken from Dagnan et al. (1998) Cognitive behavioural interview – real incidents	Vignettes: controllability positively correlated with anger and negatively correlated with sympathy. No relationship between control and optimism. Anger was positively correlated with helping. Real incidents: controllability and anger were positively related to helping
Willner & Smith (2008b)	ASQ Single item scales to measure fear, anger, sympathy, disgust, embarrassment. Optimism and intention to help measured by a single item scale	Controllability and locus not correlated to any other item. Optimism mediated the effects of both stability and sympathy on helping behaviour.

Appendix VI

Letter Granting Research and Development Approval

(to protect anonymity all identifiable information has been removed)

Dear Judith

Management Approval for Non-Commercial Research

**Project title: Understanding staff responses to challenging behaviour:
the role of knowledge, beliefs and emotion regulation.**

Thank you very much for sending all relevant documentation. I am pleased to confirm that the above project is now registered with the NHS [REDACTED] Research & Development Office. The project now has R & D Management Approval to proceed locally. This is based on the documents received from yourself and the relevant Approvals being in place.

All research with an NHS element is subject to the Research Governance Framework for Health and Community Care (2006, 2nd edition), and as Chief or Principal Investigator you should be fully committed to your responsibilities associated with this.

It is particularly important that you inform us when the study terminates.

The R&D Office must be notified immediately and any relevant documents forwarded to us if any of the following occur:

- A change of Principal Investigator, Chief Investigator or any additional research personnel
- Premature project termination
- Any amendments (particularly a study extension)
- Any change to funding or any additional funding
- Any Serious Adverse Events

We hope the project goes well, and if you need any help or advice relating to your R&D Management Approval, please do not hesitate to contact the office.

Yours sincerely

[REDACTED]

cc. Dr K. McKenzie, Academic Supervisor, University of Edinburgh

[REDACTED]

Appendix VII

University of Edinburgh Ethics Approval

**UNIVERSITY OF EDINBURGH / NHS (SCOTLAND) CLINICAL
PSYCHOLOGY TRAINING COURSE**

Research Ethics Meeting 8th March 10

Present

Ethel Quayle
Emily Newman
Suzanne O'Rourke
Paul Morris
Jill Cossar
Ken Laidlaw
Karen McKenzie

Apologies

Lindsey Murray

Judith Wishart.

It was felt that this was an interesting and worthwhile proposal which is likely to make an important contribution to the area. There were a number of issues which the Committee felt should be addressed and discussed with the supervisor. There is no need to refer back to the Committee.

Ethics

- It is unclear why (Item 19) no debriefing will be given. This should be clarified.
- Please indicate whether the supervisor has seen and agreed to the proposal.

Research

- There is need for greater clarity about which measures will be used and the kind of data that will result from them.
- Please check whether the data is appropriate for a regression analysis.
- There is need for clarification between staff available to participate and the number of cases available.

Appendix VIII

Participant Information Sheet

(to protect anonymity all identifiable information has been removed)



Participant Information Sheet

Understanding staff behavioural responses to challenging behaviour: the role of knowledge, beliefs and emotion regulation.

About me

I am a Trainee Clinical Psychologist currently in my 3rd year of training at the University of Edinburgh. I am also doing a specialist work placement in Learning Disability Services within NHS [REDACTED]. As part of my Doctorate in Clinical Psychology I am undertaking a research study.

Why have you been invited to take part in the study?

You have been invited to take part in this study because you have experience of working with someone with a learning disability who displays challenging behaviour

What is the purpose of the study?

The aim of this study is to examine the factors which might help to predict carer's responses to challenging behaviour. It is hoped that this will help us to improve our assessment of and interventions for challenging behaviour.

Research has found that carers of people with learning disabilities who display challenging behaviour often respond in different ways which can either increase or decrease the likelihood of the behaviours continuing. Knowledge and beliefs about challenging behaviour are important factors to consider when examining carers' responses to challenging behaviour. Research has also found that carer's experience a range of emotions while working with challenging behaviour, therefore, another factor which may be important is carers individual emotion regulation styles. Emotion regulation is a term used to describe how people manage their own emotions. Research has shown that people often regulate their emotions in different ways, for example, some people talk about how they feel whilst others keep their feelings to themselves.

What will be involved if I take part in the study?

If you decide to take part in the study you will be asked to sign a consent form. You will then be given a questionnaire pack.

The questionnaire pack includes:

- General information questionnaire (age, length of experience, etc.)
- Understanding of Challenging Behaviour (knowledge, management, attributions, behavioural response)
- Emotion Regulation Scale

You will be asked to complete all 3 questionnaires. At no point on any questionnaire will you be asked to provide your name or any information that would make you personally identifiable. Although you will be required to provide your name on the consent form, this will be separated from your completed questionnaires. Your responses will therefore remain anonymous.

It is important that you complete the questionnaires alone and don't confer with anyone. If you have any questions when completing the questionnaire, please contact the principal researcher at judith.wishart@nhs.net, or at the address below. Once you have completed the questionnaires, you should return them in the pre-paid addressed envelope provided. Your responses will then be collated along with all the other participants' responses. They will then be entered into a computer programme and analysed.

Will information obtained in the study be confidential?

The information collected in this study will not be recorded by your employer and will not be made available to your manager/supervisor. Because you will not provide your name on any of the questionnaires, the investigators will not know who you are throughout the course of the study. The consent form you will sign if you agree to take part in the study will be separated from the questionnaire that you complete, so your responses will not be linked to your name in any way. Anything that you fill out or sign (e.g. consent form) will be treated with the usual degree of confidentiality under the data protection act.

What if I am harmed by the study?

It is not anticipated that you will come to any harm by taking part in this study. If there is anything in the questionnaires which makes you feel upset, then it is recommended that you discuss how you feel with your manager/supervisor.

What happens if I do not wish to participate in this study or wish to withdraw from the study?

Taking part in this study is voluntary. If you do not wish to participate in this study, or if you wish to withdraw from the study at any time you can do so without giving any reasons for your decision. Your decision to withdraw will be confidential and your manager/supervisor will not be aware of your decision.

I want to take part. What do I do now?

You will have received this information sheet from your manager/supervisor. If you are willing to participate then you will be asked to complete a consent

form and then the questionnaire pack. Once you have completed both, you should return them in the envelope provided.

What happens next?

All the responses will be used to investigate the factors which may help understand carer's behavioural response to challenging behaviour. If you would like to know the outcome of the research, please indicate this on your consent form and provide a contact address.

Thank you for reading this information.

Judith Wishart
Trainee Clinical Psychologist



e-mail: judith.wishart@nhs.net

Supervisors: Dr Karen McKenzie, Consultant Clinical Psychologist
Dr Amanda McKenzie, Principal Clinical Psychologist

Appendix IX

Joint health and social work letter to project managers

(to protect anonymity identifiable information has been removed)



Dear Project Manager

I am a third year Trainee Clinical Psychologist currently doing my specialist placement in learning disability services. As part of my Doctorate in Clinical Psychology at the University of Edinburgh I am carrying out a research project which aims to enhance the understanding of the behavioural responses of care staff who work with adults with a learning disability who display challenging behaviour. **I would therefore like to take this opportunity to invite care staff who are currently working with adults with a learning disability who display challenging behaviour to take part in this study.**

About the study

Research has found that carers of people with learning disabilities who display challenging behaviour often respond in different ways which can either increase or decrease the likelihood of the behaviours continuing. Knowledge and beliefs about challenging behaviour are important factors to consider when examining carers' responses to challenging behaviour. Research has also found that carers experience a range of emotions while working with challenging behaviour, therefore, another factor which may be important is carers' individual emotion regulation styles. Emotion regulation is a term used to describe how people manage their own emotions. Research has shown that people often regulate their emotions in different ways, for example, some people talk about how they feel whilst others keep their feelings to themselves. The current study will assess the extent to which carers' beliefs and knowledge about challenging behaviour and individual emotion regulation styles predict their behavioural responses to challenging behaviour.

Care staff at your project will be asked to initially read through the 'Information Sheet', complete the 'Consent Form' and then complete 3 questionnaires.

- General information questionnaire (age, length of experience, etc.)
- Understanding of Challenging Behaviour (knowledge, management, beliefs, behavioural response)
- Emotion Regulation Questionnaire

It is anticipated that the questionnaires should take **no longer than 30 minutes to complete**. Participation in this study is voluntary and at no point will the participants be asked to provide their name or any identifiable

information. Individual responses will **not be** shared with anyone out with the research study, including Project/Organisation and Social Work/Service Managers. Participants are informed that they can contact me should they wish to know the results.

It is hoped that the results of the study will inform both Health and Social Care professionals within Grampian in supporting staff who care for adults with learning disabilities who display challenging behaviour.

I have attached questionnaire packs which include an information sheet, consent form, 3 questionnaires, and a stamped addressed envelope. **! would be extremely grateful if you could distribute these packs immediately to care staff who are currently working with an adult(s) with a learning disability who displays challenging behaviour.**

Please do not hesitate to contact either myself or your Head of Service for further information relating to this study.

Kind regards
Yours sincerely

Judith Wishart
Trainee Clinical Psychologist

Dr Amanda McKenzie (Supervisor)
Principal Clinical Psychologist

[REDACTED]
Senior Care Manager
[REDACTED] Learning Disability Services

APPENDIX X

Participant Consent Form

(to protect anonymity all identifiable information has been removed)



Participant Consent Form

Understanding staff behavioural responses to challenging behaviour: the role of knowledge, beliefs and emotion regulation.

Please circle as applicable

- I have read the participant information sheet yes/no
- I have had the opportunity to ask questions about the study yes/no
- I understand that my responses will remain strictly confidential yes/no
- I understand that I am free to withdraw from the study at any stage without giving a reason. yes/no
- I understand that taking part in this study will not have any effect upon my employment and that my responses will not be seen by my manager/supervisor. yes/no
- I agree to take part in this study. yes/no

Signature

Date

Judith Wishart
Trainee Clinical Psychologist
Clinical Psychology Department
Learning Disability Services



e-mail: judith.wishart@nhs.net

Supervisors: Dr Karen McKenzie, Consultant Clinical Psychologist
Dr Amanda McKenzie, Principal Clinical Psychologist

APPENDIX XI

Example of Responses and Corresponding Attributional Codes and Score Awarded

Response	Helpful	Unhelpful
Need not being met Pain, hunger, confusion, Unsuitable environment	Universal External Uncontrollable Unstable	Internal
Score	4	1
Poor communication skills, on part of the adult with LD. Carers have no patience.	External Unstable Uncontrollable Universal	Stable Controllable Personal Internal
Score	4	4
Having to do something the person does not want to, tiredness, poor health.	Uncontrollable Universal Unstable	Internal
Score	3	1
Frustration – not being able to express themselves. Their disability – not understanding what is being said.	Unstable	Internal Stable Controllable Personal
Score	1	4

Appendix XII

Emotion Regulation Questionnaire (ERQ)

9/03

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Appendix XIII

Results of Tests of Normality

Results of Tests of Normality

Variable	Skewness	Standard Error	Z Score	Kurtosis	Standard Error	Z Score
Knowledge	.485	.234	2.07	-.140	.463	-.03
Helpful Attributions	-1.276	.234	-5.45	.168	.463	.36
Unhelpful Attributions	-.416	.234	-.178	-.365	.463	-.77
Reappraisal	-.662	.234	-2.83	.844	.463	1.82
Suppression	.125	.234	.53	-.475	.463	-1.03
Behavioural Response	.801	.234	3.42	.02	.463	.03